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GOVERNMENT POLICIES AFFECTING THE USE OF COMMODITY PRICE RISK MANAGEMENT AND ACCESS TO COMMODITY FINANCE IN DEVELOPING COUNTRIES

Report by the UNCTAD secretariat

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INTRODUCTION

1. UNCTAD has been considerably involved in efforts to promote the understanding and use of modern commodity risk management instruments, particularly in developing countries. Such an involvement encompasses research, the training of operators and policy makers, the organization of forums for discussion and exchange of experiences, and a variety of technical assistance activities in Africa, Asia and Latin America. In this connection, UNCTAD has produced a great deal of materials to help meet the growing need for awareness building, education and training in commodity risk management for government officials and private operators, both in developing and developed countries. This need has become all the more important following the liberalizing policies that have been adopted by a large number of countries and that have increased the risk exposure of those involved in commodity production and trade.

2. This paper attempts to collect and systematize various pieces of UNCTAD's work related to government actions which affect the ability of producers, traders, exporters, importers and the government itself to use risk management markets and to enhance their access to much needed finance. The paper also benefits from additional materials produced elsewhere. The hope is that it will help policy makers and economic operators interested in promoting sound commodity risk management practices identify the barriers which need to be removed and the incentives which need to be put in place in order to achieve such goals. The contents of this paper are quite general and, therefore, the degree of relevance of the different issues will vary from country to country. Different countries have different needs which reflect their respective stage of development, resource endowment, institutional history, customs and priorities. Thus, it cannot be expected that a paper of this type will respond equally to the needs of all developing countries. In this regard, readers' comments could be highly beneficial, since they could pinpoint important aspects which are omitted or insufficiently covered here and suggest new directions for further research.

3. It should be noted that although this paper focuses more on developing countries, some aspects discussed here can also be applicable to economies in transition and, to a certain extent, to more developed economies. Even in countries with a long tradition of risk management markets (e.g., futures markets) and a wide range of ever-evolving instruments that are continuously becoming available, the knowledge and use of these markets and tools are still relatively limited - due largely to unawareness and resistance to change - and debate is still ongoing concerning several legal and regulatory issues.

Chapter I

Why Is Commodity Price Risk Management Important to Developing Countries?

1. The need for commodity risk management

4. Developing countries are, in general, heavily dependent on export of primary commodities as a source of income, foreign exchange, and government revenues.[1] In Africa, for instance, for the majority of countries, the share of primary commodities (including fuels) in total exports of goods is greater than 75%; the average share for the whole of Africa is 83%. In some countries (e.g., the United Republic of Tanzania and the Democratic Republic of Congo) the share of exports of primary commodities is as high as 99%. By the same token, imports of primary commodities (especially oil and grain) account for a large share of total imports of a large number of developing countries. With such high dependence on commodities, these countries are particularly vulnerable to the effects of commodity price fluctuations caused by erratic supply shocks and demand changes in commodity markets. The volatility of commodity prices introduces an important element of uncertainty in the commodity trade and, thus, represents a risk for producers, traders, processors and other consumers. Governments are also exposed to commodity price risk because their revenues depend largely on taxes on commodity exports and imports and on commodity-related income.

5. Price volatility poses serious problems because it makes revenues and incomes unpredictable, and this has many adverse consequences for both the public and the private sector. The following are examples of some of the problems associated with high price volatility:

- *High risk of bankruptcy and financial distress.* Price collapses cause cash flows to fall below expected levels and, as a result, affected economic actors may default on their obligations.

- *Limited ability to plan and make investment decisions.* Planning and investment decision-making become difficult for those exposed to high price variability. Investments made under the assumption of favourable prices run a high risk of becoming unprofitable if prices fall considerably below the assumed price level.

- *High margins for the services of trade intermediaries.* Intermediaries (e.g., exporters) charge higher margins in order to compensate for the risk they face when they purchase a commodity prior to having secured an export price. In the event of a price fall before the setting of an export price they make a loss (which can be substantial in the case of large price drops).

- *Lack of credit.* Banks and other credit institutions impose stringent conditions for loans, and whatever loans they provide come at very high interest rates, in order to compensate for price risk (in addition to other risks). This situation creates splendid opportunities for usurers who stand ready to informally extend credit but at a much higher cost.

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[1] In this paper, these countries will be often referred to as "commodity economies".

- *Budget overruns*. Airline companies, fuel-consuming electric utilities, fishing fleet and other large consumers who spend a large proportion of their budgets in fuels, as well as large consumers or importers of other commodities (e.g., food) run the risk of surpassing the limits of their often stringent budgets in times of steep price increases.

- *Unreliable government budgets*. The budgetary process becomes very complex and budgetary discipline difficult to maintain. Revenues and expenditures estimates (especially in cases where the government subsidizes highly consumed commodities or is itself a large consumer of imported commodities) are unreliable and lead to frequent budget overruns.

- *Problems with debt servicing*. Many developing countries have high foreign debt which was acquired under certain assumptions concerning export revenues and project cash flows. Since both can be adversely affected by price fluctuations, unless ways are found to stabilize those flows, there is a clear risk of not being able to fully service outstanding debt.

6. Both intra-year price fluctuations and inter-year price fluctuations pose problems for economic actors in developing countries.[2] The relative importance of each of these types of price fluctuation vary from commodity to commodity, since different commodities have different planning horizons. For instance, anterior price fluctuations may be of critical importance to annual crop producers (e.g., producers of maize or wheat), since for them the lag between planting and harvesting is not more than a year. Whereas for tree crop producers (e.g., coffee producers), planting generally takes place a few years before the first harvest takes place, and the same tree will yield crops for several years. Also, risk management instruments available for some commodities may simply not be available for others. For example, a long-dated swap (see annex) can be somewhat easily arranged for an oil exporter; however, such an instrument may not be so readily available for an agricultural commodity. The fact is that price fluctuations, in general, create risk and those exposed need to find ways to deal with them effectively.

7. Two well-publicized phenomena intimately associated with anterior price fluctuations are the so-called commodity "booms" and "busts". A boom occurs when, over a number of consecutive years, the price of a country's major export commodity remains significantly above the long-term trend and out of line with long-term cycles. The mirror image phenomenon is a bust. This is associated with the sharp price decline which tends to follow a boom. The adverse effects of the latter are obvious, since they represent periods of economic recession or even depression, which imply widespread income reduction, unemployment, bankruptcies, swelling government budget deficits, and so on. Booms, on the other hand, are periods of relative bonanza but if not properly managed can bring about a great deal of problems which can considerably weaken the long-term health of the economy. Because those phenomena are difficult to forecast, long term commodity-related cash flows and incomes are highly unstable in the absence of a mechanism to smooth them over time. As will be discussed in section V of this paper, such an instability leads to sub optimal economic decisions on the part of both the private sector and the public sector. Thus, it is argued here that risk management instruments are needed to deal both with intra-year and inter-year price fluctuations.

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[2] Intra-year price fluctuations are price changes which occur during the course of a year; inter-year price fluctuations are changes in the price level (say average yearly prices) which occurs from year to year. Sometimes it is preferable to speak to intraseasonal and interseasonal price fluctuations.

2. The ways of the past

8. In the past, government interventions in commodity markets were widespread in most commodity-dependent countries. In many countries the government took on the task of managing commodity price risks. Such government intervention was apparently motivated by a variety of reasons including the following: the desire to exert control over resources which are considered "strategic" or from which the government derives a large proportion of its tax revenues and foreign currency inflows; the desire to implement certain social goals such as stabilization of farmer incomes and consumer prices; the actual or perceived inability of private operators to use market-based risk management instruments; and the limited availability of instruments of self-insurance (such as savings and investment abroad) due to the under development of the capital markets or foreign exchange restrictions. Government interventions took a variety of forms, including the establishment of monopsonistic arrangements such as commodity marketing boards, government-controlled stabilization funds, exchange rate manipulations, tariffs, price bands, and so on. These methods of risk management impose high costs to the economy: price distortions which cause misallocation of resources, large government budget deficits in times of persistent low prices, and inefficiencies caused, for instance, by the protectionist element associated with tariffs. The 1980s assisted a general failure of monopsonistic marketing boards and overburdened domestic stabilization schemes, while tariffs and other price support mechanisms will not be sustainable in a world of increasing international trade liberalization, following the Uruguay Round Agreements and the advent of the World Trade Organization (WTO).

Box 1. Monopsony

Monopsony. A commodity monopsony is a firm which is the sole buyer of a commodity. In other words, and somewhat tautologically, a firm is a monopsony if it monopolizes the purchase of a commodity. A firm may acquire monopsony power by legal attribution (often the case with marketing boards and oil importing companies) or by the fact that it controls key facilities which are not elsewhere available and are costly to build (e.g., storage or milling facilities). An example of the latter is the case of the Kenya Planters Cooperative Union (KPCU). In Kenya, all coffee must be milled before being submitted to the Coffee Board of Kenya for auctioning. Since KPCU has the only milling facilities in the country,* they enjoy a *de facto* monopsony position which is likely to be reflected in the margins they charge.

* See Savosnick K. and Sood N., Price Waterhouse. "Government Controls and Commodity Price Risk Management Instruments (the Experience of Kenya)". Government Policies Affecting Coffee Export Marketing. UNCTAD/COM/Misc.55/ADD.1, GE.94-50117.

9. Government interventions took place not only at the national level, but also at the international level. One attempt at dealing with price risk at the level of international commodity markets was the establishment of international commodity agreements (ICAs). The aim of these agreements, which set high expectations in the 1960s, was to bring commodity producing and consuming countries to agree on measures aimed to change price distribution through supply manipulations, in order to eliminate or minimize price variability. Another form of intergovernmental intervention is the compensatory finance facilities like the Contingency and Compensatory Finance Facility (CCFF) of the International Monetary Fund (IMF) and the European Union's STABEX scheme, which aim to stabilize export revenues and related incomes. However good the intentions

which might underlie those international schemes, the fact is that many ICAs ran into severe difficulties (or collapsed) and the compensatory arrangements have been of little consequence.

3. The hole in the process of economic liberalization

10. A wind of liberalization has been sweeping national economies, as well as the world economy, since the mid-1980s. These liberalizing trends are characterized by widespread deregulation, elimination of government monopolies, privatization, and other policy changes intended to reduce economic distortions and induce economic efficiency and growth. At the international level, the Agreement on Agriculture incorporated in the Final Act of the Uruguay Round brings agricultural trade under the rules of the General Agreement on Tariffs and Trade (GATT) and proposes a wide range of liberalizing reforms which must be undertaken by signatory states according to set schedules. Reforms stipulated by the Agreement include, *inter alia*, the general reduction of tariffs, the elimination of non-tariff restrictions and the dismantling of agricultural export subsidies and price support schemes.

11. Whether the current wave of economic liberalization will bring enhanced efficiency, sustainable growth and generalized welfare gains is a matter of ongoing debate and lies outside the scope of this paper. But there seems to exist a consensus about at least one consequence of particular relevance to producers and traders in developing countries: global and domestic competition increases while government protective shields decrease. Another probable implication of the Agreement is a reduction of stocks of agricultural commodities in developed countries, following the withdrawal of government price support to agricultural producers. The effect of this could be a reduced capacity to buffer supply and demand shocks and, therefore, increased long-term price instability.[3] In this new competitive context, firms in commodity-dependent developing countries are, from the start, at a disadvantage. Adding to the various handicaps which typically constrain business in developing economies, they face large transaction costs (especially those caused by lack of credit) and high exposure to price risk. Therefore, if they are to improve their competitive position, firms in developing countries must act fast to endow themselves with the capacity to use modern marketing and risk management methods in order to reduce risk exposure and transaction costs.

12. Processes of liberalization in developing countries seem to have generally overlooked the need for private operators in developing countries to protect themselves from price risk exposure and for policies aimed to reduce counterparty and country risks which would lead to improved access to finance. Prior to liberalization, in many countries, major commodities were traded by a few companies or government-controlled trade houses. Producers usually were paid prices fixed by the government which, in turn, bore the international commodity price risks. Furthermore, since those trading companies were well established and had long histories of business relationship with their clients and financial institutions (or were backed by government), loans were made available to them on the basis of trust or government guarantees. Sometimes the clients would use their own credit lines to extend financing to the developing country counterpart. With economic liberalization, new actors enter the market and the export marketing structure becomes fragmented. This fragmentation implies that financial institutions and traders in importing countries will find it more difficult or costly

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[3] For a discussion of this topic see: Valdés, Alberto and Alex F. McCalla.

to assess the creditworthiness of developing country counterparts and, therefore will be less willing to extend credit without the provision of adequate and reliable collateral. In addition, in places where the government abandoned price stabilization functions, commodity consumers and producers are left completely exposed to international price risks.

4. Government as a catalyst for increased use of modern commodity risk management

13. There is a variety of financial instruments now available to help firms reduce their international commodity price exposure. Since commodity producers and traders are generally risk averse, one would think that, theoretically, they would willingly grab opportunities to lay off their price risk in risk management markets. However, in practice, many factors interplay to reduce their ability or even willingness to use such markets. These factors are, among others, legal and institutional barriers, limited knowledge and lack of the know-how to use those markets effectively. A great deal of education, training, sensitization and policy review is necessary to overcome existing prejudices and suspicions, to remove barriers, and to build confidence in the use of market risk management tools. Even in developed countries such as the United States, where the use of risk management markets is somewhat extensive and has a long history, resistance to change and lack of understanding of the workings of risk management instruments -- which can be quite complex and dangerous if misused -- has kept a high percentage of small farmers outside of those markets.[4] As an alternative to using risk management tools, producers may opt for other less desirable practices such as the immediate sale of their commodities, which may coincide with periods when prices are not very favourable.

Box 2. Risk Aversion

Risk Aversion. In simple terms, a risk averse investor is one who rejects a fair gamble (a situation where the probability of a good outcome is the same as that of a bad outcome, 50%). The risk averse investor prefers to receive a certain amount (e.g., the expected value of the gamble) to facing the gamble, which has an uncertain outcome. Risk aversion does not, however, imply absolute unwillingness to accept risk. A risk averter will willingly accept risk if she determines that the expected return is sufficiently high. Thus a bank may agree to lend money to a commodity producer operating in a relatively high risk environment by adding a high risk premium to the loan (reflected in a high interest rate).

14. In light of the above, it is argued here that it is for the government, in partnership with the private sector (including commodity exchanges, if they exist in the country), to undertake the task of educating and sensitizing operators, policy makers and relevant public servants on the need for and the techniques of modern risk management and finance. Governments in a liberalized economy are called to play a new role, one in which many developing country governments do not have a lot of experience. It is not so much that governments should stay out of the business of business but rather that they should not do the business of business. The required investment in information dissemination, training, and capacity building for risk management in countries with little related

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[4] From a presentation given by Joseph Dial, commissioner of the US Commodity Futures Trading Commission before an UNCTAD expert group meeting on Risk Management in Commodity Trade organized in Geneva in 1994. The presentation gives an interesting account of some psychological factors deterring small farmers in the United States from using modern risk management. See Dial, Joseph.

tradition can only be undertaken with the full support of the government. The interested public in the private sector needs to be informed of the benefits and costs of different risk management tools and strategies as well as of the potential dangers which arise in the absence of adequate mechanisms for controlling their use. Moreover, it is the government's responsibility to create the appropriate legal, regulatory and policy conditions for the use of risk management tools and for improved access to finance to become practicable. This is not an easy and costless task, but it is one which can no longer be postponed, given the high vulnerability of developing countries to shocks in the international commodity markets and the current trends in the global and domestic economies.

15. It is not only the private sector that stands to gain from good commodity risk management practices. In commodity-dependent countries, the public sector can also directly benefit from such practices, because international commodity price variability affects government revenue flows which are largely derived from taxes applied to the commodity exports and commodity-related income. Better risk management by governments facilitates budget planning and can greatly increase the capacity to manage a country's foreign debt.

5. A brief note on globalization

16. The marriage of informatics with telecommunication technologies -- giving rise to what has been called telematics -- coupled with advances in transportation and the increasing liberalization of domestic economies (particularly with respect to foreign investment laws and deregulation of service sectors) is increasingly transforming the world economy from a collection of well-demarcated national economies into a true global economy, made up of a network of interconnected parts. This globalizing phenomenon brings along increased competition -- which poses new challenges to developing country firms -- but it also opens up new opportunities, including some for commodity risk management and finance.

Box 3. Over-the-Counter Instruments

Over-the-counter instruments (OTC). These are risk management instruments that do not follow standardized contract specifications and that are directly negotiated between two parties and tailored in a manner which suits the specific needs of the involved parties for the period covered by the contract. These instruments can be especially suitable for long-term price protection or to manage risks related to commodities for which there are no organized markets and, therefore, no reliable reference price. Examples of such instruments are swaps, non-standard forward contracts, tailor-made (over-the-counter) options. Trading houses, brokerage firms and banks often provide those instruments. It should be noted that OTC instruments complement (rather than compete with) organized markets.

17. Fast and low-cost information as well as higher speed of international flows of capital and of physical goods imply lower transaction costs. For example, entities in developing countries have now much faster and cheaper access to price information from major international commodity exchanges (e.g., the New York Mercantile Exchange, NYMEX, or the London Metal Exchange, LME) than only a decade ago. This, in turn, increases the potential for using those markets or the prices generated therein as references in negotiations for physical trade or over-the-counter arrangements. Likewise, financial dealings involving parties in different countries have become much easier since the advent of telefaxes, electronic mail, powerful computer data bases, cable television,

teleconferencing facilities and other means of facilitating communication flows and enhancing access to information. In turn, improved commodity risk management and increased availability of finance are factors that help commodity-dependent developing countries withstand the pressures of global competition. Thus, in countries where there is a serious commitment to the promotion of the use of risk management tools and the improvement of conditions for commodity trade financing, risk management and finance goals should be added to the list of *desiderata* used to justify investment in information technology projects. In addition, facilities should be created to provide timely domestic and international market information to producers and traders.

Chapter II

Legal, Regulatory, and Policy Obstacles to the Use of Commodity Risk Management Instruments

18. The variety of financial risk management instruments currently available offer a wide range of possibilities for producers, traders, processors and other large consumers in developing countries to protect themselves against the high volatility inherent to international commodity market prices. Instruments available include a diverse array of over-the-counter instruments (OTC) which have been increasingly used by developing countries for long-term oil and metal price protection, and a growing number of instruments which are traded in organized exchanges in both the developed and the developing world. The latter instruments are standardized contracts which provide the user the ability to lock in prices (e.g., futures) or to guarantee minimum selling prices or maximum buying prices (e.g., exchange-traded and OTC put and call options, respectively). An attractive feature of options is that, contrary to the case of futures, they do not lock their holders into any specific price and, therefore, do not deprive them of the possibility of profiting from favourable price movements.[5]

19. Despite the growing recognition of the potential benefits from the use of market-based commodity risk management instruments by economic entities in commodity-dependent countries, the fact is that their use by these entities is still rather limited. The reason for this lies largely in the pervasive lack of familiarity with those instruments on the part of both private sector operators (especially small producers and exporters) and concerned government officials, but also in impediments imposed by legal and policy barriers prevailing in many countries. In some countries, outright prohibitions and restrictions limit the use of market-based risk management instruments. In others, government policies eliminate the need for managing price risks. Fiscal policies can also be a discouraging factor. An attempt will be made here to identify a few areas where current regulations impede or discourage the use of market-based risk management tools.

1. Outright restrictions

20. Some countries have outright restrictions which impede the licit use of market-based risk management instruments. The reasons underlying such restrictions are often related to factors such as fear of uncontrolled speculation, limited understanding of those instruments and their underlying markets, misconceptions (e.g., confusing hedging with speculation, suspicion fueled by negative publicity, fear of loss of control over scarce foreign exchange, and so on. Thus, in Indonesia, for example, the following restrictions have been identified in a joint UNCTAD/World Bank report:[6]

- trading of foreign futures contracts through domestic brokers is prohibited;
- commodity sales can take place only against a letter of credit;

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[5] The reader is referred to the annex to this paper for descriptions of some major risk management instruments. For a more in-depth discussion of them, please see UNCTAD/COM/15/Rev.1 (A Survey of Commodity Risk Management Instruments), December 1994.

[6] See UNCTAD/World Bank (1993).

- investment funds, foreign or domestic, must incorporate in Indonesia and are barred from engaging in futures trading; and
- pension funds are not allowed to trade futures.

21. The above restrictions have obvious negative effects. One effect which immediately comes to mind is reduced liquidity for future trading, resulting from the barring of cash-abundant institutions, such as pension funds and investment funds, from participating in that trade. Those laws would probably have to be revised if the country is interested in promoting the development of commodity exchanges, since the success of the latter is very dependent on the availability of sufficient liquidity.

22. In India, it has been reported that futures and forward trading has been prohibited or suspended for over 100 commodities, including all cereals, sugar, cotton seed and yarn and coffee. Furthermore, trading in options is absolutely forbidden. These prohibitions and restrictions have often the effect of stimulating the emergence of illegal trade.

Box 4. Hedging vs. Speculation

Hedging vs. speculation. Firms and individuals can use market-based commodity price risk management instruments both for hedging or speculative purposes. Confusion about these two different uses can lead policy- or firm decision-makers to adopt regulations and policies which discourage the use of those instruments for price protection purposes. **Hedging** is the use of risk management instruments by trade-related concerns with the sole objective of minimizing a pre-existing risk exposure. This exposure may be a result of their holding of a significant inventory (e.g., a trader who holds an inventory of grains as a stock from which she can supply her customers) or their anticipation of a future cash market transaction (e.g., a cocoa grower who expects to harvest in say about 9 months but does not have the crop on hand). This latter case is also called anticipatory hedging. The important point is that the hedger does face a risk associated with the owning of (or the expectation to own) a commodity, having incurred a liability or entered into a contractual relationship which results in a binding obligation to deliver or accept goods at a certain point in the future. **Speculation**, on the other hand, is the use of financial markets with the purpose of pursuing a profit. Understanding the difference between hedging and speculation and their respective implications is an important condition for the adoption of appropriate regulations concerning the use of commodity risk management financial instruments by those dealing in commodities. It should be noted, however, that despite the negative connotation often attributed to speculation, this activity does play an important economic role: it provides liquidity to commodity (and other) exchange markets and to over-the-counter markets. Therefore, legislation concerning speculation should be designed in such a way as to balance the need to control speculative activities (especially when undertaken by entities with interests in the physical market or when public funds are involved) and the need for liquidity. Similarly, distinct treatment may be necessary for speculative activities in domestic markets and those in foreign markets (which imply outflows of foreign currency and are not likely to contribute to an

2. Tax laws

23. In some countries, the specific tax treatment of hedging transactions may act to considerably offset the benefits of using risk management tools. In some situations, the existence of such

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See World Bank UNCTAD (1996).

unfavourable tax laws may be a result of deliberate government policies; in others, they may be a consequence of a lack of understanding of the potential of market-based risk management to bring economic advantages to trade-related users or a pure oversight (failure to take into full account how taxes imposed on related operations may adversely affect the ability to use risk management markets). The reasons underlying deliberate government policies to restrict the use of commodity price risk management through taxation include the following:

- failure to make a distinction between hedging and speculation;
- desire to discourage the transfer of precious foreign currency (which would be needed for transactions in exchange markets abroad);
- belief that the functions of risk management should be performed by the government (e.g., through marketing boards).

25. A typical flaw in the taxation of hedging transactions is what is often called the tax character mismatch. In this context, this refers to the asymmetric tax treatment of hedging-related financial transactions (e.g., transactions in the futures market) relative to the treatment applied to the underlying cash market transactions. In particular, gains made in the financial transaction are often treated as capital gains, while gains in the cash market transaction are treated as ordinary income. In situations where capital gains are taxed at a higher rate than ordinary income, the implication of such an asymmetry is obvious: the usefulness of the financial transaction, as a tool to offset losses in the cash market, is somewhat reduced since the use of financial hedging instruments will increase the firm's tax liability. On the other hand, if capital gains are taxed at a lower rate than ordinary income, and if the difference is high enough, there may an incentive for firms to engage in financial market transactions mainly for the purpose of lowering their tax liability or for speculation. However, none of these should constitute the main motivation for a trade-related firm to decide to use or not use risk management markets.[8]

26. Regulations concerning the tax treatment of losses from risk management transactions also impact on the attractiveness of these transactions to potential hedgers. The example of box 5, though simplistic, illustrates the undesirable effects of not allowing losses from futures operations to be deducted from taxable income. The locking of prices for a given quantity results in the locking of revenues. However, from the operator's point of view, the important thing is the income she keeps after accounting for all expenses and losses (or the after-tax profit). As the example crudely shows, in a world with no transaction costs associated with dealing in futures and perfect hedging, given the tax assumptions of the example, hedging with futures when losses from the financial operations can be deducted from taxable income has exactly the same effect on final income as having a guaranteed price. Thus, the price-locking effect of the hedge on profit is perfect. But when those losses are not deductible, the benefits of the hedge are greatly reduced and the higher the tax rate, the bigger the reduction. This issue of the dedeductibility of losses from hedging operations is even more important in countries with progressive commodity export taxes (i.e., with the tax rate increasing -- normally in a stepwise manner -- as the export price of commodities rise). In these cases, the futures losses

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[8] Even in cases where the government wishes to provide tax incentives to promote the use of those markets by commodity trade-related entities, a control system should be set up in order to ensure that those incentives apply to actual hedging needs. Furthermore, any such incentives should not be maintained for extensive periods of time because they are likely to introduce long-run distortions.

Box 5. India: A New Attitude towards Commodity Exchanges

India: A New Attitude towards Commodity Exchanges

India's commodity exchanges are among the oldest and least-known in the world. But they are also among the least-known ones. Several exchanges were already active in the 1920s. But while their western counterparts grew, explosively so since the early 1970s, the Indian exchanges floundered. This was principally due to the government policy framework which was in place.

Contrary to most other countries which are now eager to introduce or strengthen commodity exchanges, India has a relatively well-defined regulatory system in place, with experienced regulators; the Forward Markets (Regulation) Act of 1952 provides a comprehensive system for enabling a sound functioning of commodity exchanges. This is a large advantage - it allows the latter to avoid most of the problems of manipulation, customer fraud, unfair trading practices, etc., which may befall less well-regulated exchanges. However, rather than building on this strength to create a world-class financial system, the policies of successive Indian governments have, until recently, made it impossible for their exchanges to grow.

Commodity exchanges are, among other things, price discovery centers. The price set in these exchanges provide the best available reflection of the actual supply/demand balance for a commodity. This is ensured through the integration of the exchanges with the physical market, through their delivery systems. However, for a long time, Indian policy makers thought that, rather than reflecting the market, exchanges determined them; or in other words, that exchanges were imposing unfair prices on farmers and/or consumers. In the environment of the 1960s and 1970s, with growing deficits of many commodities, it was thought that closing down or severely restricting commodity exchanges would allow to reduce the upward price trends.

From the late 1950s to the late 1970s, a number of restrictions on exchanges were introduced, most of which are still in place. These included bans on forward trade in over 100 commodities, and a set of controls over the forward and futures trade in the nine commodities for which this trade still was allowed - these controls included a cumbersome contract approval process, price ceilings, very stringent margining requirements, etc. It should be noted that these restrictions, and the discretionary implementation of controls, contrast sharply with the initial intent of the Forward Markets (Regulation) Act, and international practice.

Government policies also had an indirect negative influence on commodity exchanges. Income tax rules which do not recognize hedging, bans on the use of the market by large institutional investors, and a series of government interventions in the physical commodity markets (storage and movement controls, external trade policies, direct marketing interventions) all went counter to a proper functioning of the exchanges.

Since the early 1990s, the Government approach towards commodity exchanges has been changing, partly reflecting the general move towards liberalization of India's economy. Pressure for change is also coming from the private sector. Exports of agricultural commodities are on the increase, and exporters are increasingly confronted with highly competitive world markets where they are forced to work on slim margins, and at the same time, sell further forward. Only futures markets can allow them to keep the resultant risks managable. Processors need to be able to fix their margins in such a manner that they can afford to invest in upgrading their equipment. In 1997, a new international pepper futures contract was introduced, and perhaps more significantly, the first independent clearing house was incorporated. Industry associations have asked for the permission to introduce many other futures contracts.

The big challenge to come is that of futures trading for domestic foodgrains. The gains for farmers, consumers and the Government of introducing such futures contracts can be huge - current Government policies absorb hundreds of millions of dollars which could be used for other purposes. But while futures markets can take over most of the price setting, factors such as the costly price stabilization and trading functions now undertaken by the government, and the heavy machinery currently in place to control agricultural markets (and the concommittant vested interests) will provide formidable obstacles to such a change.

and the gains from the sale of the physical commodity, resulting from a sharp, unexpected rise in price can both be very high. If the losses in futures are not deductible then the commodity hedger faces a very high tax liability (since the higher prices catapults her into a higher tax bracket).

27. Another related issue is that of the time when financial market gains are recognized for tax purposes. Indeed, failure to distinguish between speculation and hedging can result in legislation which require that open positions in futures contracts be marked-to-market by the end of the taxable year. This means that increases or decreases in the value of the futures contracts, even if unrealized, would have to be combined with gains and losses realized during the year and to be recognized for tax purposes. While this provision could be perfectly justifiable when applied to speculative activities, they impose an additional obstacle to the use of financial risk management instruments by entities in the commodity business whose use of these instruments is meant to reduce exposure to a pre-existing risk. These cases should be classified as hedges and the related gains or losses should be deferred and recognized at the same time that the carrying amount of the hedged asset or liability is recognized in income. In countries where good commodity risk management practices are to be encouraged, it is thus desirable to give a fairer treatment to futures contracts used for hedging purposes.

28. The issue of the timing of recognition of gains associated with hedging financial instruments does not pertain uniquely to developing countries or countries in transition. In the United States, for instance, the debate on this issue has drawn the attention of the accounting profession, tax authorities, commodity exchanges, the academia and commodity trade-related entities and has led to the review of the relevant Federal Income Taxes legislation. In general, if the use of risk management instruments is to be encouraged, it is desirable that gains or losses associated resulting from a futures transaction which qualifies as a hedge be reported as ordinary in the year the futures position is closed. However, it is a difficult task to formulate the appropriate definition of which types of transaction constitute legitimate hedging and which is not.

3. Foreign exchange regulations

29. Many developing countries restrict the outflow of foreign currency. This is particularly so in countries with high foreign debt where, therefore, there is a large need for foreign exchange to meet debt service obligations. Foreign currency controls adversely affect the ability of commodity-related concerns to engage in risk management operations in international exchanges or with foreign partners. Futures transactions, for example, involve three types of financial safeguard, called margins, which are deposits meant to show good faith and to ensure performance (the honouring of one's contractual obligations) by the entity engaging in the transaction. In brief, these margins could be defined in the following manner:

- Initial margin: funds deposited with a broker prior to trading in futures. Usually, the minimum margin is equal to the maximum daily price fluctuation permitted for the contract in question. Margins are negotiated between the trader (hedger or speculator) and the broker, and there is no special margin for developing country

Box 6. A tax implication case

Consider a coffee grower who in July is deciding on a strategy for the sale of 300.000 lbs. of mild arabica (coffee) which she will have available for sale around December. Suppose that, regardless of the grower's strategy, she incurs total expenses amounting to US$ 260,000. For starters, the grower sets her desired profit at US$48.800. She determines that given the 20% tax rate and her total expenses, she would need to sell the coffee at the price of US$ 1.07/lb. in order to achieve that profit level. It would be nice if she could find an exporter willing to guarantee her that price. She discusses her problem with her son, who had just graduated from business school, and decided to use futures contracts to lock in her price. Coincidentally, mild arabica "C" contracts were being traded at precisely 1.07/lb. in the New York Coffee, Sugar and Cocoa Exchange (CSCE). "If you lock into that price, assuming a perfect hedge*, you could make a profit of 48,800 dollars" – said the son. After learning the details of futures markets, matters of margins, brokerage fees and other transaction costs (all of which will be ignored here), the grower decides to sell 8 lots (each lot is 37.500 lbs. or 250 bags) of December Arabica "C" futures. In late November the cash price and December futures price go up to 1.17/lb. The grower sold her 300.000 lbs. of physical coffee at that price and, at the same time, bought 8 lots of December mild Arabica "C" at 1.17 lb to close her futures position. The grower recorded the results of her futures transactions as follows:

July	Sale of 8 lots (300.000 lbs.) of Dec. "C" @ 1.07/lb.	321.000	
November	Purchase of 8 lots (300.000 lbs) of Dec. "C" @ 1.17/lb.		351.000
	Loss on futures transaction:		(30.000)

Assuming no tax credits and that taxes fall on income, defined as revenues plus other gains minus all expenses and losses, she then went on to compute her profit from the sale of her 300.000 lbs. of Arabica -- which she compared to a situation where an exporter would have guaranteed her a fixed price of 1.07 lb. – in the following manner:

	Fixed price situation	Hedging with futures (losses deductible from taxable income)
Revenues	320.100	350.100
Expenses	(260.000)	(260.000)
Loss on futures	0	(30.000)
Taxable income	60.100	60.100
Taxes	(12.020)	(12.020)
After tax earnings	48.080	48.080
Final profit	**48.080**	**48.080**

But when she consulted her accountant a week later, she found out that her tax liability was indeed higher, because, according to the country's tax laws, losses from futures transactions are not to be deductible from taxable income. Therefore, her computations should have been as follows:

	Hedging with futures (losses are not deductible from taxable income)
Revenues	351.000
Expenses	(260.000)
Taxable income	91.000
Taxes	(18.200)
After tax earnings	72.800
Loss on futures	30.000
Final profit	**42.080**

Thus, the grower ends up paying much more in taxes and making a lower profit. Now, the son cannot get his long-awaited second-hand car and the grower has decided to join a group of commodity producers and traders to pressure the government to revise the tax laws so as to stimulate the use of futures markets for hedging purposes.

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* A hedge is perfect when the gains (losses) from the paper (financial) transaction exactly offsets the gains (losses) in the cash (physical) market transaction. This could happen if cash and futures prices moved *pari passu*.

entities. However, these entities may be asked by the broker to pay higher initial margins due to the perception that they pose a higher risk.[9]

- Maintenance margin: in the futures markets, traders are required to recognize gains or losses on the day that they occur. In other words, contracts are marked-to-market. Gains are added to the initial deposit and losses are deducted . If the value of the funds in deposit reaches a certain level (usually 75% of the initial margin) the trader faces a margin call, i.e., she is required to make additional deposits in order to bring the initial margin back to its initial amount. That level at which a margin call is triggered is what is referred to as the maintenance margin.
- Variation margin: this is simply the additional amount the trader must deposit to meet a margin call (i.e., to replenish the initial margin).[10]

30. Thus, unless a country has futures exchanges operating domestically, the use of futures markets may be out of reach for commodity concerns if the country has strict foreign exchange controls. Initial margin deposits would require the transfer of foreign currency or the use of proceeds from exports, both of which may be impossible, or very difficult (and risky) to realize, in face of such controls. More importantly, the payment of variation margins may be barred or delayed, resulting in the trader not being able to meet margin calls. This is particularly important because margin calls normally must be met within 24 hours and failure to post the additional margin constitutes a violation of the trader's agreement with the broker and gives the latter the right to close the futures position by deducting the loss from the trader's account and reimbursing the balance net of commission costs. The existence of a high probability that margin calls might not be met poses a more serious problem than the inability to deposit initial margins, since the latter takes place before the trade in futures (which implies that the trader solely runs the risk of not being able to engage in the transaction), whereas the former occurs after the trade, implying that the trader risks losing money in case the broker is forced to close his futures position for having fallen below the maintenance margin.

31. Foreign exchange controls affect not only the ability to use futures markets, but they also limit access to over-the-counter market transactions (such as swaps). Since these transactions take place outside of an organized exchange, they usually involve significant counterparty risks. In order to mitigate these risks, the commodity operator may be asked to set up appropriate deposits in a foreign currency or to provide solid guarantees. Therefore, restrictions on international financial flows are also likely to block access to such over-the-counter transactions and limit possibilities for price, exchange rate, or interest rate risk management. These kinds of situations tend to encourage those with large risk management needs to turn to the illicit use of risk management markets (where the use of financial markets is prohibited for reasons related to foreign exchange control) or to cheat on the reporting of their foreign currency earnings in order to set up a liquidity pool abroad to finance margins and other security arrangements in the context of risk management operations.

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[9] See Occhiolini, M. "Regulatory aspects of commodity-linked finance: implications for developing countries". In Claessens and Duncan, pp.126-154.

[10] For further discussion of margins, the reader is referred to Kolb (1991) and to UNCTAD (A survey of commodity risk management Instruments), 1994.

32. For countries with organized commodity exchanges, another adverse consequence of restrictions on international capital flows is the fact that those exchanges will probably be deprived of potentially important sources of liquidity provided by foreign investors. A foreign investor would certainly be reluctant to engage in transactions in a commodity exchange located in a country without clear and dependable rules concerning the repatriation of dividends and profits from financial transactions. The resulting reduction in liquidity, in turn, limits the efficiency of domestic commodity exchanges.

33. It is thus in the interest of commodity-dependent countries to review their regulations and policies in order either to eliminate those crippling controls or to allow greater flexibility in their application. Indeed, since foreign exchange controls are usually justified on grounds of wider macroeconomic considerations, it is probable that in many cases governments will be unwilling to remove such controls or will prefer to dismantle them in a piecewise manner for fear of bringing about disruptions. But the removal of the impediments to commodity risk management activities do not necessarily presuppose a thorough reform of the relevant regulations concerning international financial flows. What is needed is a clear definition of the set of activities which provide legitimate hedging for commodity producers, exporters, and importers and the subsequent adoption of special rules to allow related capital movements, in a manner which is timely and free of unnecessary bureaucratic formalities.

4. Marketing policies

34. Obstacles to commodity risk management often result from governmental interference with the marketing of commodities. In this context, the case of commodity marketing boards (and similar institutions) is quite infamous. Until recently, many developing countries placed the bulk if not all of their major commodity exports (and often imports) in the hands of various types of commodity marketing boards, which in many cases were also entrusted with the management of commodity stabilization funds. This policy was motivated by many factors, including the following: (i) the need to overcome limited tax collection capacity;[11] (ii) the perception that some commodities, e.g., oil and cereals, have such a strategic value that they must be brought under government control; (iii) foreign exchange considerations; and (iv) consumer protection concerns. Export marketing boards are usually government monopsonies which buy commodities from domestic producers (at government-set prices which are often determined by the boards themselves) and subsequently export them. Import marketing boards are generally government companies which detain the monopoly on the importation of some widely consumed goods. Apart from the economic inefficiencies normally associated with government monopsonies and monopolies, the existence of such institutions obviates the need for international price risk management on the part of private operators, since the price they receive is fixed by the board or other government entity.

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[11] In many developing countries the capacity to collect taxes is very limited, due, *inter alia*, to lack of human and technical resources, deficient financial reporting, poor accounting practices, and the largely informal nature of business in these countries. A solution often chosen for this problem (which, however, brings about other problems) is to concentrate exports in a commodity marketing board or to have export taxes paid directly into a stabilization scheme.

35. In the case of import monopolies, international commodity price fluctuations (at least on the up side) are easily transferable to the consumers through price revisions, but exchange and interest rate risks may still be a problem for the enterprise. Export monopsonies normally set producer prices for a given period of time (say three months). Thus, they are still exposed to some short-terms risk associated with the volatility of international commodity markets. They must also manage their exchange and interest rate risks. Producers can be considerably shielded from international price risk if they are guaranteed a minimum price or if they are assured of receiving a price which falls within a relatively narrow price band. In exchange for this protection from international prices they are likely to receive a relatively small share of the export price and are exposed to risks associated with government performance and discretion (e.g., delays in payments, politically motivated price changes, etc.).

36. The 1980s witnessed the collapse of large number of marketing boards and other similar bodies, caused by such factors as sharp international commodity price declines, accumulation of managerial errors, the failure of a number of international commodity agreements (e.g., the International Coffee Agreement in 1989), and liberalizing pressures. Of the surviving ones, most were revamped and stripped of their monopsonistic powers (i.e., have to compete now with other exporting entities). Some of them are now functioning as intermediaries which provide marketing services to producers by selling the products of the latter on condition that the related export revenues are remitted to the producer net of costs incurred in connection with the export and fees charged by the board. However, if the fees or margins charged by the board are fixed, international price risk is borne entirely by the producers. Thus, the provision of risk management on behalf of the producers (particularly the small ones) should be added to the array of services provided by these marketing entities. The operation of marketing boards along this model may be particularly useful in countries with fragmented and unorganized producers and in newly liberalized countries where private operators have little experience in international markets. In these situations, it may take some time before qualified -- but cautious -- international and domestic enterprises move in to provide the much needed marketing services which were once controlled by the government. This results in a gap which, in the absence of a government supported short-term solution, may attract shady businesses positioned to reap exorbitant rents at the expense of producers lacking bargaining power or simply facing no other choice.

37. Producers and exporters in developing countries can derive substantial benefits from using international commodity exchange markets for price discovery.[12] Prices formed in these markets can be used as reference for a variety of contracts involving domestic or international counterparties. The advantage of this method of price discovery is that it provides prices which are determined in a transparent and competitive manner, reflecting the interplay of demand and supply forces. The incentives for or the feasibility of using international markets for price reference is greatly diminished, if not altogether eliminated, when the domestic market is characterized by the existence of monopolistic (monopsonistic) or oligopolistic (oligopsonistic) structures (i.e., if the market is

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[12] The process of determining the price of a commodity, to be used, for example, in contractual arrangements, such as forward contracts, swaps and other over-the-counter contracts which do not trade in organized exchanges and, thus, do not have a built-in mechanism for price determination based on supply and demand factors.

controlled by one or a few firms, whether public or private)[13] or when the market is subject to pervasive and unpredictable government interference. In these cases, domestic cash price movements may become completely uncorrelated to international futures prices (as the former are likely to be determined by non-market factors).

38. The usefulness of an international exchange market for purposes of price discovery depends on the stability of the relationship between the prices formed in the said exchange market and those formed locally. If the two sets of prices are well correlated (i.e., they move together, though at different levels), then the differential is relatively stable (with the difference basically reflecting factors such as differences of quality, transportation costs and other transaction costs) and international risk management markets can be used for price discovery purposes, as long as appropriate adjustments are made. However, when the relationship between the domestic cash price and the international financial market price is erratic, due to non-integrated physical markets (the result of border controls or high transport costs)[14] or to perturbations caused by government interventions or price manipulations by firms with oligopolistic or monopolistic powers, cartels, and so on, adjustments may be altogether impossible to make and thus prices formed in the international exchanges may become of little or no value to domestic entities. Thus governments should refrain from excessive interference with the marketing of commodities and to the extent possible adopt policies which stimulate competition. If local realities dictate that it is better to leave marketing policies in the hands of one or a few enterprises (e.g., to take advantage of economies of scale) then these enterprises should be forced to operate more or less along the lines proposed above for revamped commodity marketing boards: they should act as intermediaries and be allowed to charge a fee for services rendered; fees should include a margin set as a proportion of the value of exports so as to encourage them to manage price risks; margin percentages should not undergo frequent revisions in order to minimize uncertainties associated with them; and in addition to the marketing services, they should also be required to provide risk management services to interested producers.

5. Stabilization schemes

39. This topic is discussed in a little more detail in section V, which deals specifically with the issue of managing booms and busts and government revenues. In general, these schemes are set up with the intent of stabilizing revenues from commodity exports (or stabilizing commodity import bills) in order to avoid large fluctuations in the income of small private producers and in tax receipts. A common *modus operandi* of these schemes is to set up a fund which guarantees a certain price floor (a lower price limit; a minimum guaranteed price) to producers and, at the same time, stipulates a price ceiling beyond which heavier levies are imposed on producers, in order to replenish the fund.

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[13] Governments may, for example, limit the number of firms allowed to deal in commodity marketing or create various agricultural "zones", and authorize only one or a few firms to carry out marketing activities within each zone. Moreover, as mentioned earlier, market control may sometimes result not because of explicit legal barriers to entry but because certain key facilities are in the hands of one or a few enterprises which use their privileged position to extract rents.

[14] A category of countries which can be particularly affected by these factors are the land locked developing countries (LLDCs). The problems faced by these countries can be greatly reduced through cooperative arrangements, with neighbouring transit countries, aimed to allow access to port and facilities in the transit country and to the harmonization of customs documentation and procedures as well as the harmonization of traffic standards and certification.

Since the existence of these schemes reduces the degree of price fluctuation facing the commodity producer, they reduce the need to manage price risks. Given that, as long as the scheme survives, minimum prices are guaranteed and while much of the benefits of high prices is taken away by the government, it may not be cost effective to use market-based risk management instruments, which, in addition to transaction costs, require investment in training and in monitoring and control structures, etc. The incentives are even less for small producers who may lack the education and sophistication to understand the advantages of those risk management tools and who, due to the low volume of their production, would have to invest in creative cooperative arrangements with other producers (e.g., producers associations) in order to be able to carry out risk management operations. Thus, the existence of such schemes discourage the use of market-based price risk management by those who benefit from them. Moreover, there would probably be less need in the private sector for stabilization schemes if, for instance, producers could diversify their productive activities, if there were incentives for them to organize and manage themselves the risks they face or if domestic capital markets were efficient and attractive financial instruments were available for commodity producers to invest excess revenues (obtained at times of high prices) and build adequate self-insurance mechanisms.

6. Tariff-based schemes[15]

40. These are schemes which use a flexible tariff structure that adjusts to fluctuations in international prices in order to insulate domestic prices and protect domestic producers and consumers. These schemes have reportedly been used in for agricultural price stabilization in some countries, particularly in Latin America, with varying degrees of success.[16] Such schemes include *reference price schemes* and *price bands*. The *reference price scheme* uses a variable tariff to guarantee producers and consumers a given price, which is usually linked to the international price by a formula which often involves the application of moving averages based on sets of past prices. If the border falls below the reference price, then the tariff is positive and set at a level that ensures that the domestic price remains equal to the reference price. If the world price is higher than the reference price then a subsidy is paid by the government (the tariff is negative). This scheme can considerably reduce the risk of price variability facing domestic producers and consumers and transfers the price risk to the government through variations in tariff revenues.

41. *Price bands* are schemes which set an upper limit and a lower limit to the level of the domestic price, thus forming a reference price range or band. When the domestic price is lower than the price floor, tariffs are applied in order to raise the price of imports, which, in turn, will pressure domestic prices to move up to the lower limit. If the domestic price exceeds the upper limit, then subsidies are paid so as to cause a decrease in the price of imports which ultimately will result in a decrease of the domestic price. Adjustments are made until the prices fall back to or below the upper limit level. The usefulness of these schemes are likely to be adversely affected by the increasing liberalization of the international trade and the consequent limits on the use of tariffs and subsidies

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[15] For more detailed discussions of this topic, refer to Coleman R. and D. Larson "Tariff-based stabilization of commodity prices in Venezuela". In Claessens and Duncan, pp. 387-418. Aslo see Valdés (1992).

[16] Coleman R. and D. Larson (ibid.) provide an extensive discussion of tariff-based schemes in Venezuela. Valdés discusses the experience with similar schemes in Chile and New Zealand.

by governments. However, neither this topic nor the possible flaws or benefits of these schemes will be discussed in this report. The relevant point here is that the existence of such schemes reduce the need for producers and consumers to use risk management markets since the prices they face can fluctuate only within the range established by the upper and lower price limits.

42. The effects of government measures that shield domestic producers from international commodity price fluctuations (such as the schemes discussed above) are in a sense similar to those of protectionist measures based on arguments of "infant industry". Their existence reduces the incentive for commodity producers to learn how to manage their risks. Then, when suddenly the government support begins to crumple under the wave of liberalizing reforms, they find themselves completely exposed but without the experience, the know-how, or the organizational arrangements (or culture) needed to enable them to hedge their income.

7. Restrictions on the public sector and on public utilities

43. In almost every country there are certain services of public utility which are provided by public (totally or mostly owned by the government, often at the municipal level) or mixed companies (partially owned by the government). Such services include public transit, electric power supply, gas distribution, food import, oil import, etc. The use of market-based risk management instruments by these companies can be problematic. Problems arise from many sources, including the following:

- fear that managers in these companies may be tempted to "gamble" with public funds;
- perception that transactions in futures and options are inherently speculative (stemming from the confusion between hedging activities and speculation);
- lack of trained personnel and little familiarity with the markets;
- resistance to change on the part of directors, who would have to educate themselves on the fundamentals of hedging in order to be able to adopt strategies and to monitor the performance of the hedge programme;
- problems inherent to the public sector organizational culture, such as rigid decision-making mechanisms, which imply that companies may not be able to make the kinds of rapid decisions that are often required when dealing with futures and options markets;
- prohibitions or legal ambiguities related to the use of those instruments by public companies.

44. Privately owned public utilities companies, where they are allowed, may also confront similar difficulties. These private public utilities are normally subjected to heavy regulation, due to the fact that they are perceived as providing key services which are essential to the smooth functioning of the economy and everyday life. Thus, the government feels obligated to use its regulating power to discipline the activities of those companies with the aim of guaranteeing the continuous supply of services.

45. Public utility companies, whether government owned, mixed, or private are usually vulnerable to commodity price fluctuations. For example, public transport companies allocate a large proportion of their budgets to the purchase of fuel. Larger than expected increases in the price of oil may render it impossible for these companies to purchase all the fuel they need, causing them to cut back on services or to borrow in the hope that prices will become more favourable or that they will be able

to increase rates, thus transferring price risks to ratepayers. Neither of these measures is a good way to mitigate the adverse effects of price fluctuation, because generally they are not well accepted by the public and draw much political fire. Rate hikes, in particular, unless motivated by concerns about negative externalities such as environmental damage, seem to run counter to the goal of improving the general economic welfare -- which is probably the main *desideratum* of an economy. Therefore, the best way for these companies to deal with their price risks is through the use of futures, options, swaps and other derivative instruments which help them reduce their vulnerability to adverse price changes. Governments should review the relevant legislation in order to balance those companies' hedging requirements with the need to keep their hedging programmes under adequate scrutiny, in order to avoid abuse or misuse.

46. In the United States it was not until the late 1980s that public utilities in the energy sector, particularly the public owned ones, began making extensive use of futures and options. One of the principal impediments faced by those companies was the lack of a clear-cut classification of hedging activities. According to one study, in the case of public transport agencies, the primary legal issue revolved around the question of whether or not energy futures programmes are considered analogous to an investment or an insurance.[17] If the programme is considered to be equivalent to an insurance, then the concerned companies face few legal obstacles since they are usually allowed to obtain insurance for risk protection. However, investments are subjected to stricter regulations and the companies usually do not have free reign on investment decisions. Since in most cases energy futures and options were considered to be investments, these agencies were, with few exceptions, barred from utilizing these instruments. According to the same study, swaps were granted a different treatment and in all cases where legal opinion was sought they were considered to be analogous to an insurance policy, so the public transport companies could use them to protect themselves against price risks.

47. Government agencies, in general, may also be limited in their ability to use price risk management markets, for reasons that are similar to the ones pointed out above. However, more and more, governments (both in developed and developing countries) whose tax revenues are heavily dependent on commodities are becoming aware of the wisdom of using those markets to guarantee that the revenues they actually receive do not fall below projected levels. In the United States, the Texas State Treasurer's Office began using options in 1991 to hedge the state's oil receipts. Alaska, another state which greatly depends on income from oil-related activities, has also implemented hedging programmes. A famous case of a developing country government hedging revenues through the use of futures markets is the Mexico oil futures deal which took place in 1991. In order to lock into high oil prices which followed the 1991 invasion of Kuwait, the Mexican government set up a sophisticated programme to sell a large number of futures contracts and entered into various swap arrangements. The sales were discreetly made through several, dispersed intermediaries in order to avoid unfavourable market reactions. The overall strategy was to ensure that Mexico would receive at least USD$17 a barrel, the price used in its 1991 budget revenues estimates. Coming from a country like Mexico, which many consider to be very protective of its oil resources, the deal was seen

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[17] See Decision Analysis Corporation of Virginia (DAC).

as a sign of considerable pragmatism and change in the Mexican government's attitude.[18] Hopefully, the success of this deal will encourage governments in other commodity-dependent developing countries to use market-based risk management instruments to reduce their price risk exposure. Countries which import large quantities of a commodity such as oil, can also benefit from hedging in futures, as long as a good programme is put in place. In 1991, both Chile and Brazil experimented with purchasing futures in order to lock their oil import bills. While the case of Chile was considered to be relatively successful, the Brazilian experience did not fare so well, due reportedly to the fact that contracts were bought at a time of relatively high prices.[19]

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[18] The Wall Street Journal Europe. "Mexico is Reaping the Benefits of Hedging in Oil Futures". March, 1991.

[19] op. cit.

Chapter III

Legal, Regulatory, and Policy Obstacles Blocking Access to Commodity Finance

48. Entities engaged in the production and trade of commodities in developing countries have large finance needs, both for pre-export activities (which involve a variety of costs, including inland transportation costs and pre-export storage and processing) and for price risk management purposes. In fact, although price risk management and finance are two distinct issues, they can be intimately related, with the benefits of one reinforcing the benefits of the other. Price risk management operations usually require some form of financing. Examples of the financing needs are hedging credit lines to finance margins, required when futures or options are used, and special accounts set up to provide security in swap arrangements (which as most over-the-counter transactions involve counterparty risks). On the other hand, when an exporter negotiates a relatively large loan she may be required to hedge her production so as to minimize the probability of default due to adverse price movements.

49. However, access to finance is very limited in many developing countries and constitutes one of the main problems facing commodity producers and traders in these countries. This limitation stems from a variety of factors. Domestic financial markets are usually weak and underdeveloped. Banks and other credit institutions may constrained by regulatory restrictions (e.g., they may be forbidden from providing loans in foreign currency) and often provide only a limited range of products, which may not be the most adequate to finance commodity related projects. Loan provision may involve lengthy bureaucratic procedures which can be quite painful for small producers. Many countries lack rural credit facilities and where they exist they are often poorly managed. Interest rates tend to be high, due to capital market inefficiencies and misguided macroeconomic policies. The lack of adequate credit institutions to serve the commodity producers and traders, particularly in agriculture, lead to recourse to informal credit providers who charge usury rates. Of course, the more deficient the domestic financial market, the greater the importance of issues of access to international financing.

50. Many of the major constraints affecting domestic financial sector can be overcome only through extensive reforms aimed to stir the domestic capital market, in particular, and the whole economy, in general. But this paper will not address this subject. The focus will be, rather, on problems related to access to international sources of finance. Much of the financing needs in the commodity marketing chain of developing countries can be better satisfied if loans are available in foreign currency. This is because if loans are denominated in the same currency as exports (usually a hard currency, e.g., dollars for oil), then they are less risky, due to the elimination of exchange rate risk. Additionally, margins required for international price risk hedging operations should logically be in the currency of exports. Since domestic financial institutions have limited capacity or authority to provide foreign currency loans, the issue of access to international sources of finance become extremely important. What follows in this section is an overview of the types of obstacle which often block or limit commodity producers' access to international financing. It is further suggested that

governments can and should adopt policies to remove those obstacles so that commodity concerns, and the country in general, be able to benefit from lower cost finance.[20]

1. The problem of lack of credit

51. Until the commodity price slump of the 1980s, which led to the demise of a large number of marketing boards and trading companies and to sizable loan defaults, credit to commodity producers was vastly provided or facilitated by the trading companies or the marketing boards themselves, which would frequently use their own credit to enable producers to obtain finance. Those companies had relatively easy access to finance, due to the fact that they were well established and/or, in the case of marketing boards, because they could easily obtain government guarantees. Banks did not have much trouble with these loans because they relied on the strength of the business relationship between the trading company and the producer (which was usually a long one). The collapse of the marketing boards and of many trading houses as well as the liberalization of commodity marketing opened possibilities for many new actors to enter the commodity export business. This fragmentation of the commodity export sectors makes it much more difficult for foreign (as well as domestic) banks to assess the creditworthiness of the potential borrowers. The costs involved in obtaining information about the creditworthiness of an entity in a developing country or in an economy in transition are often very high, due, *inter alia*, to the following: most of these economies have no reliable services which specialize in the collection of credit information; financial reporting requirements are generally lacking; telecommunication with many developing countries can be very difficult and is usually very expensive. In addition to these, there may be other factors such as unclear land rights which makes it even more difficult for banks to rely on the strength of an entity's balance sheet (since the true value of one's assets cannot be easily determined).

52. Foreign banks, which are risk averse in nature, are normally reluctant to extend credit to little known developing country entities because of the perceived high counterparty risk arising from the above-mentioned limitations and the high country risks associated with the majority of developing countries. These country risks are caused in part by weaknesses inherent to the underdeveloped state of their economies -- the solutions to which can be expected only in the long-term -- but they can also be caused by other structural and regulatory shortcomings which could be overcome in a relatively short period of time through proactive and focused government intervention. Actions that could be taken by the government in this connection include measures to minimize the political risks perceived to be associated with the country; the review of policies and regulations which make it less attractive for foreign banks to provide loans to domestic entities; and the creation of conditions for the use of collateral as loan security. Improved access to foreign sources of finance will not only increase the availability of loans denominated in hard currency but will also result in lower cost of finance, since,

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[20] A great deal of this section draws on or was inspired by the following reports: UNCTAD (Collateralized commodity financing - with reference to the use of warehouse receipts), 1996. Also Budd, Nicholas (UNCTAD/COM/56). The reader is referred to these reports for a more detailed discussion of the topics contained in this section. The former report provides an in-depth discussion of the issue of collateralized financing and the use of warehouse receipts, while the latter presents a very useful, albeit succinct, account of the legal and regulatory problems which constrain access to financing for pre-export activities and for risk management.

in light of the macroeconomic distortions that plague a number of developing countries, domestic interest rates in developing countries tend to be higher than international rates.

2. The use of collateral

53. When financial institutions grant loans to entities in developing countries they routinely charge more than they would charge similar entities in a developed country. That is because they add a premium (which can be very high) to the interest rate, in order to compensate for the higher risks normally associated with developing countries. One way to mitigate this problem and considerably enhance finance possibilities (and at a lower cost) is through increased use of collateralized finance. Collateral can be provided in the form of land, buildings, financial securities, inventory, or any other asset which can be pledged to or put under control of a lender or her trustee for purposes of loan security. The desirability of a particular form of collateral depends on a variety of factors, including degree of liquidity, storability, and ease of delivery. It would seem that a good form of collateral for developing country producers are the very commodities they produce. But for the use of this form of collateral to be possible, the country's policies and regulations should not pose unnecessary obstacles. Indeed, the government should willingly undertake the task of creating the conditions for the widespread use of commodities as collateral. The government should additionally stimulate the development of a good warehouse system to facilitate the use of such collateral. For a country with heavy dependence on commodities, lower cost of capital (interest rate) for commodity-related businesses are likely to benefit all the sectors of the economy.

54. The value of a collateral depends on the degree of certainty that, in case of default, the credit provider can take possession and realize a fair price on its sale. In particular, for a foreign loan provider, the credit guarantee value of a collateral depends on the extent to which it meets a number of conditions, including the following:

- the title to the collateral is valid under the relevant country's law;
- the quality of the good placed as collateral meets the lender's expectations as specified in the agreement with the borrower;
- the cost of verifying the quality of the collateral is small;
- in case of default, the lender can take possession without hassle or having to bear unreasonable costs; likewise, she should be able to export the distrained commodity without problems;
- the country's institutions (including laws and policies) are stable and the risk of arbitrary governmental actions such as confiscation and suspension of export licenses is minimal;
- the country's justice system is independent and works;
- political insurance is available at a reasonable cost.

55. Governments could help improve the reliability of collateral through a variety of actions. The following points refer to a few actions which can be taken to improve the legal, regulatory, and policy environment for the use of commodities as collateral for purposes of obtaining finance from international sources:[21]

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[21] cf. Budd.

Box 7. Uganda moves to create a warehouse receipt system

Uganda moves to create a warehouse receipt system

A good warehouse receipt system (WRS) can considerably enhance possibilities for the use of commodities as collateral in finance deals. One country where the government has understood the potential benefits of a good and reliable warehouse receipt system is Uganda. Indeed, in contrast with what has been the practice in many other developing countries, the Ugandan government has taken a decisive and active role in addressing the risk management and financing needs arising from the process of liberalization of the commodities sector. In this vein, in 1995, the government created a Task Force on Risk Management and Warehouse Receipt System (TF) to analyze the constraints facing the coffee sub-sector and to propose measures to overcome them. The Task Force's findings and advice would then be fed into a pilot project to improve conditions for the use of risk management instruments, particularly warehouse receipts, in the coffee sector, the experience from which would serve as the basis for projects addressing the needs of a wide range of commodities.

Among the main recommendations advanced by the TF was the call for the establishment of a warehouse receipt system. The government promptly approved TF's recommendations and moved to set up an Implementation Committee (IC) in order to speed up the process. IC was expected to deal with the legal, institutional, and financing requirements of a warehouse receipt system as well as with the training and sensitization of stakeholders. Perhaps the most important output of IC's work is the Warehouse Bill and Regulations. This bill is designed to provide the adequate framework for an independent and reliable WRS susceptible of lending credibility to the receipts issued by its member warehouses. The bill includes provisions for the licensing of warehouses, standards and regulations for safe storage of agricultural produce, a warehouse bonding system for the protection of depositors, and a national system of inspection and grading of produce.

Parallel to the work in legal, regulatory and institutional aspects, the IC has undertaken a campaign of sensitization of stakeholders, which included seminars for the Uganda's Bankers Association, Uganda Coffee Exporters Association, members of the Board of the Uganda Coffee Development Authority (UCDA), and other selected stakeholders. IC's training package covers a wide range of topics of practical relevance to both public officials and private operators involved in the coffee sector. Examples of such topics are as follows:

- warehousing techniques and practices; development and management of warehouses
- quality control, assurance and certification;
- insurance and risk management;
- commodity trade finance;
- Commodity risk management

If successful, the pilot project will lead to the creation of an independent Warehouse Receipt System Authority which will bring together representatives from several commodities sub-sectors and will be charged with the task of carrying implementing a WRS programme. However, only time will tell whether the Ugandan experience will indeed significantly help solve some of the financing and risk management constraints of coffee sector operators. It is certainly a rare instance where an African government has shown a firm commitment to address the financing and risk management needs arising from the vacuum created by the liberalization of the coffee business. In any event, it is an experience that should be closely observed by other commodity-dependent developing countries which have recently embarked in commodity sector liberalization, for, in fact, such experience could be a real test of the new role that governments are called to play in promoting the development of their countries' commodity sectors.

a. Improve commercial laws. Commercial laws, rather than being an obstacle, ought to provide a framework which facilitates and stimulates financing activities. Laws concerning acquisition and transfer of title to goods on hand, on the ground, in the ground or

underground should be clear; so should be land tenure laws, laws governing transactions involving warehouse receipts, the rights and priority standing of the various potential claimants to the assets of a bankrupt entity, and so on. The laws should be easily accessible so that legal costs associated with financing deals are kept to a minimum. Some governments may consider investing in the development of electronic legal data bases and the compilation and regular updating of the country's legislation of most relevance to commodity financing. This would be a great improvement in places where the relevant laws are scattered in piles of legal bulletins. In undertaking this task, governments should avail themselves of the assistance of serious and competent counsel.

b. Remove obstacles to foreign exchange transfers. The transfer of foreign exchange and the setting up of offshore accounts to meet hedging margin requirements should be expressly authorized; likewise, the use of export receipts to set up collateral for export (or import) finance should be allowed. However, these operations should be regulated and monitored in order to avoid abuse and speculation.

c. Develop a good warehouse receipt system. The use of commodities for collateral is made easier when a good warehouse receipt system exists. This presupposes the existence of certain conditions: properly equipped and managed warehouses; capacity to inspect and monitor the conditions and activities of the warehouses in order to provide reliable certification; and clear and facilitating laws for the transfer of title to goods through the exchange of warehouse receipts.

d. Remove risks associated with the issuance of export licenses. Many countries require exporters to obtain a license to export their goods. The regulations governing these licenses were often designed with insufficient or no consideration to their potential incentive effects on commodity trade and risk management finance. Eventually, export licenses should be eliminated so that exporters can freely export. But in some countries these licenses are still used as means to avoid fraudulent (e.g., cheap quality) exports -- which can be damaging to a country's commercial image – and to derive information which can help governments assess the flow of exports, for tax collection purposes. However, where export licenses still exist, they should not be taxation mechanisms in themselves and should be allowed to be transferred or assigned to foreign entities who are parties to a collateralized finance deal. The issuance of a license should be speedy and flexible and should occur when it is most convenient for the exporter. For example, a lender or a provider of a hedging credit line who has acquired a security interest on a given commodity used as collateral should be assured that a license for the export of the commodity in question can be easily obtained whenever the borrower (or in case of distrain, the lender) is ready to ship the good to repay the outstanding loan. This would reduce the risk that the loan repayment be frustrated because of export licensing problems.

e. Provide or help create facilities for the registration of security interests. The reliability of collateral provided by developing country entities can be greatly improved if there are dependable mechanisms for the registration of security interests. These mechanisms would enable lenders to be certain that the collateral is not already pledged to another entity in a manner which prejudices the ability of the lender to take possession of the collateral in case of default or bankruptcy of the borrower, as stipulated in the contract between the producer

and the lender in question. The registration facility should be strictly controlled to avoid corruption and registration procedures should be straightforward and not involve inconvenient taxes and fees.

f. Improve the country's insurance system. Insurance should be available for a variety of purpose, including to protect collateral in storage and to protect against the risk of natural disasters such as drought, flooding, and plagues. Obstacles ought to be removed so that insurance is available in hard currencies and payable to entities outside the exporting country without restrictive exchange controls. When domestic insurance is incapable of offering adequate services, international insurance companies should be allowed to operate in the country.

Box 8. Permit Foreign Companies to take Title and hold Export Licenses

Permit Foreign Companies to take Title and hold Export Licenses. By far the least expensive form of political risk coverage and the form having the greatest underwriting capacity is the CEND (Confiscation, Expropriation, Nationalization or Deprivation) policy covering confiscation risks and denial of export licenses. This coverage is normally only effective if the insured (usually the foreign trading company but sometimes a lender) has good title to the commodity and holds an export license in it own name. By taking one small step, which is to adopt laws and foreign exchange regulations which permit a foreign buyer to take title to commodity even if only a portion of the eventual purchase price has been paid, and which allow the issuance of an export license to the buyer at the time title is taken (subject to price fixing and payment at the time of export) the exporting country and its lenders can enjoy the finest rates and terms of coverage available for that country in the insurance market.

Source: "Legal and regulatory aspects of financing commodity exporters and provision of bank hedging line credit in developing countries". Budd, Nicholas, White & Case, Paris, UNCTAD/COM/56.

g. Show strong commitment to reforms. Governments which are committed to creating an improved environment for commodity marketing and risk management finance should be consistent in their actions and send strong messages that testify their commitment to carry out the necessary reforms, in order to gain the trust of the interested public. Governments, in this context, should refrain from arbitrary actions which block or unreasonably delay the implementation of agreements between the borrower and the foreign lender, particularly in what concerns the taking of possession of collateral and its subsequent sale or export. It is also desirable that relevant government agencies establish regular contacts with major international insurance companies in order to help ascertain the areas where policies could be improved in order to increase the country's standing for political risk insurance purposes.

56. Government commitment to the kinds of action mentioned above can help reduce the risks associated with doing business in the country (including sovereign risks), leading to a wider availability of relatively low-cost political insurance and finance. Easier access to finance, in turn, leads to better marketing practices (for example, producers do not have to rush to harvest or sell their goods because of pressures resulting from lack of finance) and facilitates the use of risk management instruments.

Chapter IV

Stabilizing the Economy: the Management of Commodity Booms and Busts

1. The economic costs of commodity booms and busts

57. Commodity prices generally follow long-term cycles. However, frequently these cycles are broken and relatively short periods (say two years) of exceptionally high prices set in. In these situations, commodity revenues and the associated tax receipts are high and one speaks of a commodity "boom". Booms are often followed by sharp price declines which are referred to as "busts". In well-diversified economies, the effects of changes in commodity prices can be largely offset by price movements in other sectors. However, in commodity economies, the need to manage commodity booms and busts are particularly important because, in view of the fact that they are poorly diversified, a period of commodity bust (or boom) is tantamount to a general economic bust (or boom). Furthermore, the capacity of these economies to manage price risks tends to be much less than in more developed economies.

58. Periods of bust can be compared to periods of severe economic recession or even depression, depending on how sharp the price decline is. The consequences of this phenomenon are many: widespread unemployment, massive losses and sharp income fall, lower tax receipts, bankruptcies and financial distress, loan defaults, increases in foreign debt arrears, and, of course, social malaise. Ironically, in these times when the country's economic actors have exceptionally large need financing needs, the supply of loans becomes even scarcer, because lenders understand that risks can increase considerably in periods of economic hardship. As a result, the effects of the bust are worsened and prolonged.

59. While the need to manage busts are easily understood, in view of their blunt negative economic effects, the need to manage booms may not be so obvious. However, they do need to be managed because the high prices associated with booms are not permanent and there is no way to predict exactly how long they last. Besides, the boom is typically followed by a sharp and rapid price decrease which can severely hurt those entities who made expenditure and investment decisions based on the assumption that the boom would last. Wide price fluctuations are always a problem, since they increase uncertainty, thus risk. Higher risk implies many negatives including, *inter alia*, the following: economic actors (including producers, exporters, and governments) have reduced planning capability (since underlying price parameters are less reliable); the budgetary process becomes much more difficult and fiscal discipline hard to implement; the cost of capital is higher, due to higher risk premiums; cash flow assumptions for project evaluation are less reliable because of the high unpredictability of prices (implying that project cash flows must be discounted at high risk-adjusted rates).

60. A particular danger associated with booms in commodity countries is the tendency for economic entities both in the private and the public sector to behave as if the boom were a permanent phenomenon, when in fact it is temporary. Unless appropriate mechanisms are created to smooth revenues and expenditures over time, those in the private sector tend to consume and invest more,

and governments[22] tend to adopt spending that is out of line with long-term revenues trend.[23] When prices begin to slump (i.e., a bust begins to set in), projects are abandoned or suspended, loans contracted in "good times" often cannot be repaid, and the adverse effects of the price decline are amplified. Governments, in particular, will find themselves facing large budget deficits and incapable of pursuing countercyclical policies aimed to reverse the bust. In fact, because of the budget deficit the pressure is for government to contract spending, which amounts to a procyclical policy, i.e., one which enhances the bust rather than reversing it.

61. Commodity booms are often accompanied by a phenomenon which has been coined "Dutch disease". This phenomenon occurs because higher commodity prices generate high levels of foreign exchange which, in the absence of adequate stabilization and insulation mechanisms and financial escape valves (such as the possibility of investing in foreign financial markets), tend to cause real exchange rate appreciation. This phenomenon is further amplified in contexts where import restrictions limit the ability to use the surplus foreign earnings to purchase imports.[24] At the same time, resources tend to be over-allocated in the boom commodities in detriment of other tradable goods. Since many commodity countries have limited opportunities in other sectors, the tendency is for a large part of the income derived from the boom to be reinvested in the commodity experiencing boom prices, in an attempt to reap the highest benefits possible from these prices. This, coupled with over-appreciated real exchange rates, tends to reduce the competitiveness of tradable goods produced in the non-boom sectors. One of the consequences of this is a slowdown of economic diversification.

2. Managing booms and sweetening busts

62. In light of these adverse effects of booms and busts, policy makers feel the need to adopt policies aimed to reduce the impact of booms and to make busts more palatable, through the stabilization of revenues. Among the policies adopted one often finds the following:[25]

➢ *Export taxes*. High export taxes are set in periods of boom in order to decrease the windfall income which accrues to private entities. Governments claim that the receipts from these taxes are destined to investment in key development projects which in the long run should benefit all in the economy. In fact, since it is not clear that public projects bring higher economic and social returns

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[22] In boom periods, government revenues can experience a big boost, due to direct contributions from government-owned companies dealing in commodities (as in often the case in the petroleum, metals and minerals) and through indirect receipts generated from a variety of taxes, including export and income taxes.

[23] Reportedly studies done in the 1980s revealed that in Colombia and sub-Saharan Africa the ratio of government consumption to GDP increased during boom periods, suggesting higher government spending motivated by the boom. Cf. Hill, Catherine.

[24] High real exchange rate appreciation was experienced in the Netherlands in the 1960s when the discovery of natural gas in the North Sea resulted in an export boom. Hence the name "Dutch disease".

[25] See Varangis, et al. (1995)

than private projects, it may be that taxes simply transfer resources to the public sector, without solving the above-mentioned problems (particularly "Dutch disease").

➢ *Stabilization funds*. Generally, these funds are mechanisms which attempt to generate forced savings (both in the public and private sectors) in periods of boom and supplement spending power (through subsidies to the private sector and transfers to the government's treasury) in periods of bust. Because these schemes have been widely used in commodity countries, they will be further discussed below.

➢ *Commodity boom bonds*. In order to avoid a sudden influx of foreign currency (and somewhat insulate the economy from the "Dutch disease") governments in some countries (e.g., Colombia) have allowed central banks to issue bonds denominated in foreign currency and force domestic commodity exporters to hold a given percentage of their export revenues in these bonds. However, the use of this instrument is still very limited.

➢ *Liberalization*. The reform of key areas of economic activity could help countries avoid some of the problems caused by commodity booms and busts. Financial sector reforms, for example, if properly undertaken, could spur the development of new financial services and instruments which could stimulate commodity producers and exporters to save more in times of boom. These savings would serve as a self-insurance mechanism which would alleviate the vulnerability to busts. Capital account liberalization would open possibilities for investment outside the country, thus reducing the risk of excessive real exchange rate appreciation. Some have also suggested that periods of booms are ideal for governments to undertake some economic reforms such as the elimination of import controls, which could also be an outlet for pressures that the larger flow of foreign earnings can put on real exchange rate levels. However, a caveat is in order here. Granted that it is more opportune to implement those reforms when times are good, governments should resist the temptation of rushing them in times of boom just because they are easier to sell then. Such reforms ought to be based on wider macroeconomic foundations and should be implemented at a pace which is compatible with other reforms taking place in the economy. Besides, if imports are downward sticky (meaning a fall in income leads to a less than proportionate reduction in imports -- at least in the short run), then if the boom is followed by a bust, serious balance-of-payments problems could ensue.

3. Stabilization funds

63. Many commodity economies use stabilization funds to smooth the flow of government revenues related to certain major commodities, and often to provide income support to small producers. A general operation rule of these funds could be described as follows: the fund uses a given formula (often based on some moving average of past prices) to determine a threshold price, around which a band is set; if the international price of the commodity (adjusted for certain costs) rises above the range (boom periods), the fund uses the taxation power vested in it by the government to increase taxes on producers and, at the same time, retains the extra tax earnings which would otherwise accrue to the treasury; if the international price falls below the range (bust periods) then the fund pays subsidies to the producers; at the same time, rules are set for the transfer of resources from the fund to the government; the funds' surpluses are saved as reserves to cover transfers required in bust periods. This way, a minimum producer income would be guaranteed at the cost of foregone windfall income in boom times and reduced flows of funds into the government's treasury. The performance of these funds has been mixed. Even within the same country, funds for different

commodities have performed differently. For instance, it has been reported that in Papua New Guinea the copra stabilization scheme has had a significant positive impact on income stabilization and has survived since its creation in 1948, despite having to overcome some problems from time to time, especially following the sharp copra prices decline of 1985. However, the same cannot be said for the palm oil stabilization scheme which ended up being suspended in 1990, after exhaustion of two of the three funds which it comprised.[26]

64. Problems with the functioning of the stabilization schemes arise from a number of factors, some of them being the following:

- Funds are often poorly managed, due to lack of adequate technical skills or government interference.
- Commodity prices are extremely difficult to forecast, thus threshold prices are likely to be unreliable.
- Some commodities may undergo long periods of persistently low prices.
- Rules regarding government drawdowns may be lax or ignored for political convenience.
- There may be strong pressure from the public and government entities for funds to be spent when they are perceived to be high; the policy may be criticized on grounds that precious resources are held in reserve when there are pressing development needs to be met.
- When prices stay high for some time, funds may be pressured to increase the threshold price in order to alleviate producers from some of the tax burden. But if prices decline again, it may not be so easy to sell a thorough downward revision of the threshold price.

65. A combination of factors, including some of the above-mentioned ones, often lead to the depletion of stabilization funds, requiring the government to bail them out or to suspend them. The relevant question now is whether these schemes can guarantee stabilization over an extended period of time in the absence of some of the above problems. This is a question to which this paper has no answers, but, according to some authors, the sheer random nature of commodity prices makes it impossible to survive over long periods of time, even if they operate within relatively wide bands.[27] Nevertheless, the chance of survival of stabilization schemes could be vastly increased if some of the risks were externalized to the international market, through, for example, the use of options (in the case of import price stabilization funds) and swaps (for export oriented funds).[28]

66. Price risk management functions should, in principle, be the responsibility of the concerned private entities. The government should limit itself to the task of managing its own risks and of facilitating the use of market-based instruments by private operators. Government controlled stabilization schemes ought to be maintained only where conditions are non-existent for the use of price risk management markets by the private sector, particularly small producers. This is still the situation of many commodity economies but the goal should be to create the conditions for the

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[26] See Claessens and Coleman.

[27] See Duncan and Rutten, p. 1.

[28] Refer to Claessens and Varangis

increased use of those instruments. In any event, where stabilization schemes remain, they should be subjected to strict management and preferably required to engage in hedging operations in order to minimize the probability of early depletion. Rules concerning the transfer of funds to the government should be clear and respected, so that the scheme can indeed perform its smoothing function. A desirable rule, if possible, could be that drawdowns be allowed to grow, in real terms, at a set, sustainable rate. This would be cycle-neutral rule (neither procyclical nor countercyclical) and would improve budget planning, since the flows of revenues would be more predictable. Additionally, measures should be taken for surpluses to be applied in investments abroad, in order to sterilize the effects of large foreign earnings on the domestic money supply and avoid "Dutch disease". The performance of the scheme would then be reviewed at regular intervals in order to determine, *inter alia*, how best to utilize reserves in case of high accumulation. The discipline required to run cash abundant stabilization schemes within strict rules is not an easy feat. It would be naive to assume that governments would easily give up control of such important resources. It is not uncommon for governments, regardless of the prevailing regime under which they operate, to display a certain degree of what could be called "political moral hazard", which translates into the frequent conflict between their development mandate (which aims at long-term goals) and the immediate political interests of its leaders. In unstable regimes, governments often use heavy spending as a means to perpetuate their power or to avoid collapse. In democratic regimes, the temptation for spending may be particularly high in periods nearing elections. And resources accumulated by stabilization schemes can be far too important to be given up.

4. Diversification

67. In addition to efforts to promote market-based risk management governments ought to continue to stimulate economic diversification. For the economy as a whole, diversification is probably the best safeguard against the adverse effects of commodity booms and busts. As the experience of developed countries shows, the use of market-based risk management can be increased manifold but is unlikely to be widespread. Thus, it is ultimately economic diversification which is the key to economy-wide protection against vulnerability to unexpected commodity price changes. In the past, it seems that much of the efforts in this area were limited to campaigns to explain the advantages of diversification and to technical support, in terms of project identification and design, introduction and demonstration of new production techniques, the provision of seeds and inputs (in the case of efforts at horizontal diversification in agriculture), and other like measures. It appears that not much consideration has been given to the potential of certain improved marketing and management practices (such as price risk management) to enhance the ability of producers to diversify. It would appear that income stability coupled with increased managerial sophistication -- which is a condition for as well as a by-product of the practice of price risk management -- would naturally lead to improved planning capacity and eventually enhance diversification efforts. International institutions dealing with development matters should take the initiative in research into the possible relationship between commodity risk management (and finance) and economic diversification.

Chapter V

Some Institutional and Infrastructural Development Actions to Promote Commodity Risk Management and Finance

68. In addition to the actions suggested in the previous chapters, namely those aimed to improve the legal, regulatory, and policy framework for the use of market-based commodity risk management tools and improved access to finance, and the above considerations on managing economic booms and busts, there are various other areas where government intervention can greatly increase a country's capacity to use those tools and to tap low-cost finance. What follows is simply a set of selected examples of those areas of intervention.

1. Development of commodity exchanges

69. Commodity exchanges are institutional arrangements which provide the opportunity for producers, traders, and processors to reduce their transactions costs and manage their price risks. Commodity exchanges can range from meeting places where producers, traders, and processors exchange spot goods to arrangements where commodities can be exchanged on the basis of samples to more sophisticated commodity futures exchanges where standardized contracts exchange hands. The standardization of contracts contributes greatly to reduction of transaction costs since the buyer does not have to worry about verifying the quality claims of the seller.

70. Several developing countries have recently begun or intensified efforts to set up new commodity exchanges or to improve existing ones. According to one report, this trend is highly motivated by the reduction of government intervention in the agricultural pricing and the liberalization of markets, which create a need for reliable price discovery mechanisms.[29] However, each country has its own specific characteristics and it is important to develop exchanges that reflect the needs of the various potential users. Thus, in developing these commodity trade institutions efforts should be made to involve in the process a wide range of interests engaged in the commodity business. The success of an exchange depends on several factors, including its acceptance by the public, the existence of a large number of potential players with strong interests in the commodity business, and whether there are price fluctuations (in situations where prices are determined by government, cartels or other monopolistic arrangements this is not possible).

71. Governments can play a critical role in initiating exchange development or in supporting private entities bent on undertaking such a task. Some of the actions that governments can undertake in order to provide an adequate environment for the development of commodity exchanges are the following:

- set up the appropriate legal and regulatory framework for the transparent functioning of exchanges, in order, *inter alia*, to protect the hedging interests of consumers, producers, processors, and traders who use the market for trade-related reasons and to protect small players from fraud;

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[29] cf. World Bank/UNCTAD, p. 1.

- provide oversight over trade on the exchange in order to avoid abuse;
- commit to the development of key infrastructure, such as roads, warehouses, telecommunications, quality control services, etc.
- adapt tax policies and banking regulations so that they stimulate, rather than discourage, the development of exchanges and their use for risk management purposes;
- remove inefficiencies in the physical market which interfere with the free functioning of market forces, such as government price fixing and monopolistic structures;
- educate public opinion on the role of exchanges and the potential benefits and the costs involved in their use.

72. In its effort to properly regulate the operation of exchange, the government should balance the need to exercise the control and supervision required for the smooth functioning and the good image of the exchange, on one hand, and, on the other, the need to avoid excessive control which could strangle the exchange's operations. In this context, it should be pointed out that governments should avoid the temptation of barring the participation of non-traded related interests, as these entities can play a valuable role as providers of liquidity. Permanent dialogue with exchange institutions as well as with major user groups can be particularly fruitful in that it may reveal areas where government-controllable impediments exist or where further regulation is needed.

73. A major task in promoting commodity risk management is the provision of training to potential users and government officials. Risk management operations can be very complex and should be used only when the potential user understands the benefits as well as the costs and risks involved. Companies engaging in risk management operations should be able to set up adequate structures for the design and implementation of the risk management program, which must carried out by technically qualified personnel. Managers must have enough understanding of the programme so as to enable them to monitor its performance and protect the company from fraud and misuse. Government officials, in turn, must be properly trained so as to be able to appreciate the economic and social benefits of commodity risk management. Without such an appreciation one cannot expect them to be supportive of regulations aimed to create a friendly environment. Staff in the central bank, in the ministry of finance and other relevant agencies dealing with commodity risk management issues should be sufficiently qualified to issue related opinions, to administer the government's own risk management programmes and to monitor the activities of private entities in order to ensure that risk management transactions are being undertaken in accordance with laws and regulations and that speculation is kept under control.

74. In addition to the training needs there is a need to set up clear accounting standards in the country and to introduce or improve financial reporting requirements that facilitate the assessment of the financial soundness of commercial interests. This aspect can be particularly useful for loan providers and investors, as well as government entities. For small producers, a starting point could be training in basic bookkeeping methods and business concepts.

75. For a developing country with high dependence on commodities, issues of commodity price risk management and finance should always be present in policy discussions. Policies adopted by different parts of the governmental structure should be consistent and mutually reinforcing and should reflect the government's goal of promoting the use of risk management tools and improving access to finance. For instance, if tax laws are adapted to the needs of hedgers, then it should be ensured that, for example, foreign exchange controls established by the central bank do not offset the

Box 9. World Bank Offers Special non-Commercial Guarantees for Import Finance Deals

World Bank Offers Special non-Commercial Guarantees for Import Finance Deals

Some experts have advocated that an international institution with a solid credit rating should create a facility to provide political and sovereign risk insurance to those commodity-dependent countries facing high country risks. If this were to happen, financing over and above country limits could be available to producers and exporters, for the relevant international institution's creditworthiness would substitute for the country's.

The advocates of such a scheme have further suggested that such a role could be effectively played only by an institution such as the World Bank or the IMF which is in a position to exercise leverage over the countries' governments. Indeed, some have noted, these institutions ought to be particularly interested in undertaking such a role, because in many cases the problem of access to international finance is exacerbated by the vacuum created by the disappearance of government owned or supported entities (e.g., marketing boards) as a result of liberalizing measures following pressures from those two international institutions. However, despite the fact that this idea has also been embraced by some staff members of the World Bank, it seems that one would have to wait quite a long time before the Bank's management or its member countries be convinced of its advisability.

One interesting step in the general direction of an international export finance guarantee scheme is the newly developed World Bank Pre-Export Guarantee Facility. This facility is not designed to provide guarantees to commodity exports per se. They are, rather, intended to cover non-commercial risks associated with the import (or leasing) of input goods destined to the production of export goods by private operators. Risks covered by the scheme are essentially of a political and sovereign nature and include, *inter alia*, the following:

- Acts of government which restrict or prevent currency conversions or the transfer of payments to foreign lenders;
- cancellation or non-renewal of import or export licenses;
- the imposition of restrictions on the import of input goods or on the export of goods, and which did not exist prior to or at the time the finance deal was made;
- expropriation, including intervention, confiscation, nationalization, requisition and sequestration by act of government, which expressly prevents or restricts the operation of the borrower so as to cause the permanent and total cessation of its activities;
- seizure of goods or prevention of sale;
- the occurrence of war or civil disturbance;
- the imposition of new and increased import or export taxes;
- interference with logistical services, preventing or delaying the receipt, storage, loading, transporting and shipping of the relevant input goods or exports;
- interference with the repossession or removal of leased goods.

The *modus operandi* of such a scheme is, in general terms, as follows: the government sets up an entity (e.g., in Ukraine a Guarantee Administration Unit was created) which issues guarantee contracts; the guarantee contracts are backed by an "Irrevocable Undertaking to Pay" from a well-established foreign bank called "the Agent Bank", this, in turn, is supported by the World Bank Pre-Export Guarantee Facility. In case the borrower defaults for any of the reasons covered under the contract, and assuming that the borrower had complied with all of its obligations under the same contract, the Agent Bank proceeds to pay the lender and then seeks to obtain repayment from the government. If the government defaults, then the World Bank repays the Agent Bank. This schemes become feasible only because of the World Bank's political and economic leverage vis-à-vis governments.

The financing benefits of such an international guarantee extend well beyond the nominal total amount of the guarantee. In fact, considerable financial leverage accrues from the guarantees, because since they are destined for short term loans they can be used to back up several deals throughout the year. This implies that, for example, a $200 million guarantee can, in a period of a year, support a total of up to $800 million in loans with an average maturity of 3 months.

Bosnia, Ukraine, and, more recently, Moldova have benefited from World Bank's guarantees. Unfortunately, so far this practice has been adopted only by the International Bank for Reconstruction and Development (IBRD). However, some of the Bank's staff members see no reason why it could not be also adopted by the International Development Agency (IDA), in which case lower income countries could also benefit. Those staff members further point out that with certain adjustments in the Bank's policies, such guarantees could also be made available to help finance more general commodity export deals.

incentives provided by the revised tax laws. If this were to happen it would not only hurt the potential hedgers but also the government itself, since the revision of the tax laws had probably entailed considerable investment. The approach to the improvement of the relevant legal, regulatory, and policy environment should be an integrated one which leaves no room for institutional jealousies and similar interdepartmental adversarial behaviour. In order to facilitate this task, it may be even worthwhile to create a unit within the government which aims specifically and primarily at the promotion of the use of market-based risk management. The functions of such a unit (which could be supervised by a board composed of representatives from several government institutions and private interests, including commodity exchanges) could include the following:

- dissemination of information about relevant legislation;
- research and identification of areas where obstacles exist;
- provision of training; and
- coordination among departments on related matters.

2. Promoting the development of institutions to provide intermediary risk management services to small producers

76. For small producers who do not have enough volume of production, experience and know-how to effectively use price risk management markets, the empowerment of producers' associations (e.g., farmers' cooperatives) could provide the solutions for their risk management needs. The cooperative would pool the resources of its members to sell futures or buy options or to engage in other desirable risk management operations on behalf of the membership. This way, the gap which is left after the withdrawal of government intervention could be overcome. Although there is considerable experience (not always positive) with production cooperatives in developing countries, risk management or financial cooperatives are not common. The successful establishment of this cooperative role will require considerable study and a great deal of education and organization. The government seems to be well positioned to stimulate such initiatives and to provide the support needed. Education and awareness raising are important to dispel prejudices about hedging and also to ensure that the members of the cooperative (or association) understand the objectives of risk management. For instance, suppose that the cooperative sells futures to lock into a certain price. Then if subsequently the price goes down, the cooperative management is likely to be praised by the members for a "job well-done". But if, instead, the price rises the management is likely to be blamed for the losses in futures by members unfamiliar with the workings of a hedge. Options, on the other hand, would probably be less problematic, since they only provide an insurance for price decline and do not take away the possibility of benefiting from price increases.

77. Until conditions are ready for the appearance of producers' hedging cooperatives, it may be desirable for governments to use institutions such as marketing boards to provide the risk management services needed by small producers. Such institutions would act strictly as intermediaries which would use their know-how and credit to provide hedging services in exchange of a small fee. This is a role that could be added to stabilization schemes in countries where they still exist.

3. Enhanced role for international financial institutions

78. It has been argued by some that the international financial institutions could play a larger role in helping developing countries improve access to international sources of commodity trade finance. As was mentioned before, one of the main obstacles to this kind of finance for developing countries is their high risk. If it were feasible to set up a scheme whereby an international financial institution with outstanding credit ratings would provide insurance for the sovereign risks associated with commodity finance deals involving developing countries, the latter would be able to obtain low-cost finance and to be free of constraints such as country credit limits which limit the loans that banks can provide to developing country entities. The scheme could also include facilities for the discounting of letters of credit from central banks from developing countries. Those who advocate the establishment of such a scheme further argue that in order for it to be successful and sustainable it would have to be backed or assumed by institutions such as the World Bank and the International Monetary Fund, by virtue of the significant leverage they have over the countries in question. Governments in commodity countries should take a close look at these ideas.

4. Information infrastructure development

79. Information is increasingly becoming the most important input in a large number of economic activities. Access to information and to modern means of communication is a key factor of competitiveness in today's world. This applies also to activities related to commodity risk management and finance. Good means of telecommunication and the availability of timely market information enhance the possibilities to use the modern tools of risk management. Furthermore, they are factors that contribute to the reduction of transaction costs and the facilitation of the process of negotiation between domestic entities and potential lenders abroad. Governments in commodity economies should thus give high priority to the development of a good information infrastructure. In considering investment in this kind of infrastructure in connection with major projects, such as the installation of a teleport in an industrial park to attract foreign investment, the government should also take into account, when appropriate, the possible benefits of that infrastructure for users and providers of risk management (e.g., a nearby commodity exchange).

ANNEX

COMMODITY PRICE RISK MANAGEMENT: THE MARKET PLACES AND THE INSTRUMENTS

World market prices of primary products often fluctuate widely and rapidly. This poses a number of problems for commodity producers, traders and consumers, including processors, and for those with an indirect exposure to commodity price risks. Actual sales prices may turn out to be lower, or purchasing prices higher, than originally envisaged. The profitability of investments in commodity production or commodity processing is particularly affected, as it depends by definition on future prices.

Different actors in the commodities field have sought and developed instruments to cope with the commodity price risks to which they are exposed. These instruments include stabilization programmes and funds (at the international, national or company level), marketing strategies involving the timing of sales and purchases and long-term fixed-price contracts, as well as a number of market-based instruments, notably futures contracts. Since the beginning of the 1970s the importance of the latter in the trade of commodities for which they exist has been growing, both as hedging instruments and as mechanisms for establishing the international price of the commodities concerned.

There are several reasons for this. First, the increasing number of suppliers on commodity markets has led to a decline in the bargaining power of producers and in the number of long-term trade agreements with more or less stable administered producer prices. There was therefore a greater need for independent price discovery mechanisms. Furthermore, this evolution has resulted in greater volatility in commodity prices which has, on the one hand, increased the need for protection against price risks while, on the other, providing a sufficient degree of price fluctuation to attract liquidity to futures markets through the activity of speculators.

A second reason is that several national and international schemes for price stabilization had encountered difficulties. Commodity market participants therefore had to look for other mechanisms to protect themselves from excessive price risk. Third, the high real interest rates of the early 1980s caused high storage costs. It was therefore much cheaper for commodity traders and consumers to obtain a claim on a commodity by purchasing a futures contract than it was to purchase and store physical materials. This changed the perception of commodity traders and consumers regarding the trade-off between holding commodities in store and using futures and options markets. Fourth, the easier access to information and communications networks has greatly facilitated participation in the exchange markets for a large number of participants all over the world.

The growing importance of futures contracts has led to a dramatic increase in the kinds of market-based risk management instruments that can be used. It has also increased the flexibility they provide to potential users. This chapter offers a brief review of the range available.

A. Organized and over-the-counter markets

Market-based risk management instruments are available as standardized or tailor-made contracts. Standardized contracts are usually traded on commodity futures and options exchanges; these contracts (futures and options) stipulate the specific quality of a commodity, the specific volume, and specific delivery times and procedures. Tailor-made risk management contracts are created and offered by a range of commodity trading houses (including the trading arms of large petroleum companies) and financial institutions (brokerage companies and private banks). This market is called the over-the-counter market; the instruments offered include forward contracts, swaps, and commodity bonds and loans.

A commodity exchange is a financial market where different groups of participants (hedgers, that is, those covering price risks in physical transactions, and various types of speculators) trade commodity-linked contracts, either futures or options, with the underlying objective of transferring exposure to commodity price risks. Organized commodity futures exchanges have existed since the last century; organized options trade was introduced in the early 1980s. The world's most important commodity exchanges are located in developed countries, and they bring important invisible foreign exchange earnings to these countries. The main ones are the Chicago Board of Trade (CBOT), New York Mercantile Exchange (NYMEX), London Metal Exchange (LME), Tokyo Commodity Exchange (TOCOM), London Commodity Exchange (LCE), Commodity Exchange, Inc. (COMEX, New York), Tokyo Grain Exchange (TGE), International Petroleum Exchange (IPE, London), and the Coffee Sugar & Cocoa Exchange (CSCE, New York).[30]

There are also commodity futures exchanges in a number of developing countries. Brazil's Bolsa de Mercadorias & Futuros (BM&F), where, since May 1991, US dollar-denominated coffee, cotton and live and feeder cattle contracts are traded alongside several other commodity contracts denominated in local currency and financial contracts, is now the world's fifth largest futures exchange. Other exchanges can be found in Singapore (the Singapore International Monetary Exchange, SIMEX, and the Rubber Association of Singapore Commodity Exchange, RASCE) and in Malaysia (the Kuala Lumpur Commodity Exchange, KLCE), while smaller, mainly domestically oriented commodity futures exchanges exist in Argentina, China, Hong Kong, India, and the Philippines. Several other countries, including Chile, Indonesia, and Mexico, are envisaging the creation of their own exchanges. There are also commodity exchanges in the CIS republics, although only few of the auction-type market places existing in these countries have taken the step from spot-market trading to forward and futures market trade.

Trading on a commodity exchange can take place in a variety of ways, with open outcry being the most common one. In an open-outcry system, people authorized to trade assemble during a trading session on a market floor. They indicate by hand signals and by calling out (hence the name "open outcry") the orders they would like to place and the price. A trading session can last anywhere from five minutes to a few hours. During this period, prices move rapidly, rarely remaining stable for more than a few minutes. Information on prices thus formed is distributed almost instantaneously through national and international communications networks, and in many cases provide the national or international benchmark prices for physical trade in the underlying commodity.

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[30] See also UNCTAD (A survey of commodity risk management instruments), 1994.

For over-the-counter instruments, the market is "made" by intermediaries. They are the ones who decide which instruments are available, for whom, and at what price. These intermediaries include trade houses, brokerages and banks. In its simplest form, the over-the-counter market consists of an intermediary offering a client a particular risk management instrument for a certain price, presumably tailor-made to the needs of the client. A somewhat more advanced form occurs when a broker collects the quotes of a number of banks and trade houses, and is thus able to offer the most competitive quote to potential clients, sometimes by way of an electronic information service. All the companies offering over-the-counter instruments are risk-averse. They try to limit or even eliminate their risks when offering risk-management instruments by offsetting transactions, in the over-the-counter market, on a commodity futures exchange, or in physical trade. This has several consequences. One is that, as the possibility to offset swaps and similar mechanisms by physical transactions improves an intermediary's capacity to offer different instruments, several investment banks have found it attractive to become involved in physical trade. Another consequence is that organized commodity exchanges and the over-the-counter market are interrelated and complementary rather than competitive: the use of over-the-counter instruments usually induces an increased use of the futures market.

B. For which commodities do market-based risk management instruments exist?

Futures and options contracts exist for most of the main primary commodities traded internationally.[31] Several contracts are available in the fuels sector and for cocoa, coffee, cotton, live animals, maize, orange juice, palm oil, rubber, silk, soya beans, soya bean oil, sugar, wheat, aluminium, copper, gold, lead, nickel, silver and zinc. However, it should be noted that not all contracts can be considered as providing a suitable risk management instrument for all of the trade in the respective commodity: many contracts are mainly used for domestic purposes; others, even though they are used for world market trade, do not cover price risks for all the grades of the relevant commodity or for all the regions in which they are traded. For example, the existing cotton futures contracts are of little use for exporters of longstaple cotton, while the New York crude oil contract is of little relevance for oil trade in East Africa and parts of Asia.

The over-the-counter market only fills some of these gaps, as most of the instruments that they offer are based on exchange-traded contracts. At times, they can build on these contracts, for example by offering a crude oil swap specifically tailored to prevailing prices in the South-East Asia region. Only in rare cases does the over-the-counter market offer instruments for commodities for which there is no futures market; this is the case in particular for coal and woodpulp, commodities with an active physical market and reliable independent price reporting.

C. Forward contracts

Forward contracts are agreements to purchase or sell a specified amount of a commodity on a fixed future date at a predetermined price. Physical delivery is expected. If, at maturity (the future date that has been agreed to in the contract), the actual price (the spot price) is higher than the price in the forward contract, the buyer makes a profit, and the seller suffers a corresponding loss. If the

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[31] See UNCTAD op. cit. and UNCTAD (Technical and regulatory conditions influencing participation in commodity exchanges) 1993.

spot price is lower, the reverse occurs. Nevertheless, having a predetermined price eliminates the risk of price changes for both the buyer and the seller.

There are different forms of forward trade. A number of organized forward markets exist (e.g., in China, India, Indonesia, Russian Federation). However, most forward trade is conducted over-the-counter, with transactions made directly or through brokers and dealers by telephone, telex and fax. These forward contracts, often negotiated on the basis of the prices formed on commodity futures exchanges, were until recently widely used for all commodities and in all regions. With the liberalization and resulting fragmentation of the marketing systems in many agricultural commodity-exporting countries, use has apparently declined, as small local private exporters, unlike marketing boards, tend to sell spot.

D. Futures contracts

Futures contracts are, in subtle ways, different from forward contracts. Like forward contracts, they are agreements to purchase or sell a given quantity of a commodity at a pre-determined price in the future. But, unlike forward contracts, physical delivery is not necessarily implied: the contract can be used to make or to take physical delivery, but usually, it is offset by a financial transaction on or before maturity (the closing date of the contract) making an equivalent reverse transaction.

Like forward contracts, futures contracts more or less lock in the price a user will receive or pay, but this time the mechanism is indirect. To hedge, a seller who has agreed to deliver a specific quantity of a commodity in the future at the price prevailing at that future time would, simultaneously, sell a futures contract or contracts for the same quantity at the current price for future delivery. When he actually delivers his physical good, he also buys back his futures contract. If the market price on the day of delivery is lower than the price in the futures contract, the loss on the physical market is compensated by the higher price on the futures contract (he buys back the contract for a price lower than the one at which he sold it). On the other hand, if the price in the physical market is higher than that for which he sold the futures contract, the gain on the physical market is offset by the loss on the repurchase of the futures contract.

One important difference with forward contracts is that futures contracts are "marked to market" every day: if the futures price moves adversely for a holder of a futures contract, that holder is obliged to pay into the clearing-house (which guarantees the exchange's contracts) a sum equal to the value of the adverse movement (a margin call). This prevents users of the market from carrying large unrealized losses over a long period, and thus reduces the risk of default. However, this practice can create liquidity problems for market users as margin calls usually have to be covered within 24 hours. Although such margin calls do not represent losses for hedgers for whom adverse price movements in the futures market should coincide with favourable price movements in the physical market, most banks and other providers of credit are often somewhat wary of providing the required credit lines, in particular in the case of developing country companies. Futures contracts are automatically liquidated when margin calls are not met; therefore, companies without ready access to a sufficient amount of convertible currencies often prefer to use the futures market indirectly,

through physical trade contracts such as "executable orders".[32] In this case, the contract partner (normally a trade house) takes responsibility for margin payments.

Developed country companies still account for the bulk of commodity exchange futures activity, be it for speculative or hedging purposes. Use by developing countries and Central and Eastern European countries of the exchanges directly or through intermediaries is rather limited, although it would seem to be growing. A very small number of developing country companies, all in the metals area, are members of developed country exchanges.

E. Options

Options are risk management instruments that protect those who buy them against unfavourable price movements while maintaining the possibility to profit from favourable ones. The cost of buying an option is called a premium. Put options provide protection against price declines, call options against price increases. Buyers of options are not exposed to any margin calls. Selling options, on the other hand, is a complicated and risky business, and sellers of options have to cope with possible margin calls. (At least for options traded on the organized exchanges, there is also an active over-the-counter market.)

The introduction of options on exchanges is fairly recent. It has followed a fast expansion in the over-the-counter option market during the 1970s. The first exchange-traded commodity option contract (since options had been banned in the 1930s) was for sugar in 1982 on the CSCE. Commodity exchange option trade is now active for a number of commodities - but mainly for short maturities, with few transactions extending beyond one year. Options on futures are traded actively for oil, gold, silver, coffee, cocoa, sugar, soyabeans, cotton, aluminium and copper. Over-the-counter, an active trade in options of up to three years is developing.

Like futures, options are still predominantly used by developed country companies - trade houses, developed country producers and consumers, and companies specializing in arbitrage between the futures and option markets. Some developing country companies and institutions, mainly in Latin America, use put options as a protection against price declines for their exports and call options as a hedge against an increase in their import bill.

F. Swaps

Swaps were developed as a long-term price risk management instrument to complement futures contracts which, until recently, were only available for up to 18 months forward and which in most cases are not very liquid beyond six months. A commodity swap is a purely financial agreement covering a specified volume of a commodity. Two prices are involved. One is variable and usually expressed in relation to a published price index such as the price of a futures contract; the other is fixed at the time of the agreement. Producers and consumers still buy and sell the physical commodity in the open market, but under the swap the participants pay, or are compensated for, amounts related to the difference between the fixed and the variable price so that they have locked in the price for the commodity at the time of the swap agreement. In effect, swaps are long-

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[32] See UNCTAD (A survey of commodity risk management instruments), 1994, paras. 62-64.

term custom-designed hedges which improve the ability of a company to repay a loan or to pay a dividend. Swaps are therefore attractive to lenders and investors as they ensure the cash flow of the company to which they are providing finance.[33]

Commodity swaps were developed in the mid-1980s and had become quite important by the late 1980s. Initially, banks and a number of trading companies (generally with production and/or refining interests which allowed them to offset risks by commercial operations) were the only ones providing swaps. They are still the main participants, but a number of swap brokers, traditionally active on the financial swaps market, have begun entering the commodity field. Most of those active in promoting swaps act only as intermediaries, minimizing their risks by offsetting swaps (a swap with a consumer being arranged back-to-back with an identical reverse swap with a producer) or futures transactions. Compared to a swap agreement directly between a consumer and producer, the use of an intermediary lets the intermediary carry all risks associated with performance of the swap (the counterpart risk, which includes the sovereign risk factor - see chapter III). The maturity of most commodity swaps is between one and seven years. Shorter-term swaps can be arranged when futures or forward markets do not exist to hedge the exposure (e.g., for products not traded on exchanges). In some rare cases, swap deals are as long as 25 years.

G. Commodity bonds and loans

Commodity bonds and loans are a complicated set of risk management instruments, which have as their goal the management of the financial risks of the lender/investor in addition to that of the company or country that issues the bonds or receives the loans. They are usually linked to investment projects or debt reschedulings in order to obtain access to capital on more favourable terms, and are not designed to manage price risk in commodity trade. Most commodity bonds issued so far have been linked to gold, silver and fuels; some have also been linked to aluminium, copper, nickel, coffee and cocoa. The use of such bonds expanded throughout the 1980s; the approximate value of public issues as of 1991 totalled around US$4 billion; the value of private issues, in particular in the fuels area, is probably much larger.

Most commodity-linked deals have so far been done in developed countries.[34] The earliest deals involving developing countries were designed to raise finance on domestic capital markets.[35] Recent examples of raising finance on international markets include the underwriting of a small palm-oil-price-linked loan in Malaysia by Citibank, the financing of a copper investment with copper-price-linked finance in Papua New Guinea by Metallgesellschaft, and gold loans to Brazil and Ghana.

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[33] Examples of the operation of swaps can be found in UNCTAD (idem), paras. 80-82.

[34] For instance, a major part of the expected gold production for the next two to three years in Australia, North America and South Africa is covered by gold loans, and several Western oil companies have issued commodity-linked bonds.

[35] Mexico's state-owned oil company, Pemex, had used oil-price-linked bonds, denominated in pesos, as its main source of finance in the early 1980s. Both interest and principal payments on the bonds were tied to export prices for Mexican crude oil. This gave Pemex considerable protection during times of low prices, albeit at a high cost. In 1988, Brazil's state-owned mining company, CVRD, issued two- to four-year bonds, worth US$ 268 million in local currency, tied to gold prices.

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